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(54) Title: FRAGRANCE COMPOSITION

(54) 発明の名称: 香料組成物

(57) Abstract: By combining a definite amount of a musk with a component having a specific chemical structure, the odor characteristic to acidic hair care products can be masked and thus a fragrance composition having a high stability over a long time can be obtained. A well-balanced fragrance composition having excellent initial rise of a scent from bubbles, excellent initial rise of a scent from bottle top and an excellent lingering scent can be obtained by arbitrarily combining a component (E) mainly characterized by giving a favorable scent from bubbles, a component (F) mainly characterized by giving a favorable scent in bottle top and a component (G) mainly characterized by having a favorable lingering scent.

(57) 要約:

一定量のムスク類と特定の化学構造を有する成分とを組み合わせると、酸性の毛髪化粧料独特の臭いをマスキングでき、かつ長期安定性にも優れた香料組成物が得られる。泡での香り立ちがよいことを主たる特徴とする成分 (E)、瓶口での香り立ちがよいことを主たる特徴とする成分 (F)、残香性の良いことを主たる特徴とする成分 (G) から任意に選択される香料を組み合わせることによって、泡での香り立ち、瓶口での香り立ち、残香性の良い香料というバランスのよくて優れた香料組成物が得られる。

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## DESCRIPTION

FRAGRANCE COMPOSITION5    **Field of the Invention**

          This invention relates to fragrance compositions which exhibit a high masking effect on acid smell, retain good long-term stability at high temperatures, give off a good scent from a bottle in which the hair cosmetic composition is filled as well as a good scent upon application of the hair cosmetic composition and are excellent in the persistence of such scent after the application, even when added to a hair cosmetic composition having a pH of 1 to 5.

15   **Background of the Invention**

          Conventional hair cosmetic compositions generally have a pH in the neutral range and contain little acid therein, so no problem has been manifested about an acid smell from a cosmetic base. Further, no attention has been paid to fragrances added to hair cosmetic preparations or their stability in the acidic range.

          With the consumers' needs changing in recent years, developments have been made to formulate hair cosmetic compositions having a pH in the acidic range such that various functions can be imparted to them. Acidic hair cosmetic

compositions, however, give off a peculiar acid smell. A need has, therefore, arisen to mask a smell of a cosmetic base contained in acidic hair cosmetic compositions.

5        Acidic hair cosmetic compositions are low in pH. When fragrances added to conventional hair cosmetic compositions are simply added to such acidic hair cosmetic compositions, they develop such a problem that an odor balance deteriorates and an unpleasant odor manifests (JP-A-2000-143453).

10        The present invention provides a fragrance composition which can mask a smell peculiar to an acidic hair cosmetic composition and is also excellent in long-term stability. The present invention also provides a fragrance composition which gives off a good scent from a bottle in which a hair cosmetic composition is filled, as well as a good scent upon application  
15        of the hair cosmetic composition, and is excellent in the persistence of such scent after the application.

#### Disclosure of the Invention

20        The present inventors, therefore, have proceeded with various investigations. As a result, it has been found that a combination of a musk with one or more ingredients of specific chemical structures in particular proportions makes it possible to obtain a fragrance composition which can mask a smell peculiar to an acidic hair cosmetic composition and is  
25        also excellent in long-term stability.

Described specifically, the present invention provides a fragrance composition to be added to a hair cosmetic composition having a pH of 1 to 5, comprising the following ingredients (A) and (B), or (A) and (C), or (A), (B) and (C):

5 (A) from 0.1 to 70 wt.% of a musk;

(B) from 0.001 to 80 wt.% of at least one compound selected from the following compounds (i) to (v):

(i) compounds represented by the following formula (1):



wherein  $R^1$  represents a linear, branched or cyclic hydrocarbon group having from 2 to 14 carbon atoms, which may contain an oxygen atom or nitrogen atom in at least one carbon-to-carbon bond thereof, and  $R^2$  represents a linear, branched or cyclic  
15 hydrocarbon group having from 1 to 15 carbon atoms, which may contain an oxygen atom or nitrogen atom in at least one carbon-to-carbon bond thereof,

(ii) compounds represented by the following formula (2):



wherein  $R^3$  represents a hydrogen atom or methyl group, and  $R^4$  represents a hydrocarbon group or cyclic hydrocarbon group, in which an  $\alpha$ -carbon or  $\beta$ -carbon to an ether linkage in an ester group in formula (2) has a branched chain,

25 (iii) lactones having total carbon numbers of from

5 to 14,

(iv) ketone compounds having a cyclic or chain skeleton and having total carbon numbers of from 5 to 14,

(v) aldehydes having total carbon numbers of from 5 to 14; and

(C) from 0.01 to 90 wt.% of a hydrocarbon having a total carbon number of from 5 to 15.

Further, the present invention also provides a hair cosmetic composition having a pH of 1 to 5, comprising the above-described fragrance composition.

For a fragrance composition to be added to an acidic hair cosmetic composition having a pH of 1 to 5, on the other hand, it is important as basic requirements to mask an acid smell derived from a cosmetic base and to have good long-term storage stability. Further, from the viewpoint of its comfortable use by consumers and the enhancement of its attraction as merchandise, it is also important that the hair cosmetic composition has a good scent at each of the following three stages:

1. The scent emitted from the bottle mouth is favorable since this serves as one of the important factors for consumers upon selecting a brand at the stores.
2. The scent upon its application is favorable.
3. A favorable scent remains at an adequate intensity on the hair after the application.

The present invention also provides a fragrance composition for a hair cosmetic composition having a pH of 1 to 5, comprising at least two ingredients selected from the following ingredients (E), (F) and (G), wherein the content of ingredient (E) is from 10 wt.% to 70 wt.% of the fragrance composition, the content of ingredient (F) is from 5 wt.% to 60 wt.% of the fragrance composition, and the content of ingredient (G) is from 10 wt.% to 60 wt.% of the fragrance composition:

(E)  $\alpha$ -amylcinnamic aldehyde, acetophenone, decanal, undecanal, undecenal, dodecanal, 2-methylundecanal, octanal, nonanal, allylcyclohexyl propionate, allyl phenoxyacetate, anisaldehyde, anisyl acetate, anisyl acetone, borneol, 3-(p-tert-butylphenyl)-propanal ("BOURGENAL", trade name of Quest International B.V.), 7-methyl-3,5-dihydro-2H-benzodioxepin-3-one ("CALONE", trade name of Pfizer Inc.), cinnamyl acetate, cis-4-decenal, cis-jasmone, citronellyloxy acetaldehyde, dodecanenitrile ("CLONAL", trade name of International Flavors & Fragrances Inc.), 2-methyl-3-(isopropylphenyl)-propanal (cyclamen aldehyde), dihydrojasmone, methyl dihydrojasmonate, dihydromircenol, tricyclodecylidene-4-butanal ("DUPICAL", trade name of Quest International B.V.), ethyl 2-cyclohexylpropionate ("ETHYL POIRENATE", trade name of Kao Corporation), ethyl

2,6,6-trimethyl-1,3-cyclohexadiene-1-carboxylate ("ETHYL  
 SUFRANATE", trade name of Quest International B.V.), ethyl  
 isovalerate, ethyl linalol, ethyl vanillin, eugenol,  
 6-ethylidenoctahydro-5,8-methano-2H-1-benzopyran-2-one  
 5 ("FLOREX", trade name of Firmenich, Inc.), ethyl  
 tricyclodecan-2-yl-carboxylate ("FRUITATE", trade name of  
 Kao Corporation), franeol,  
 ethyl-3-(bicyclo[2.2.1]hepto-5-en-2-yl)-3-methyl  
 glycidate ("GLYCOMEL", trade name of Firmenich, Inc.),  
 10 2-methyl-3-(3,4-methylenedioxyphenyl)-propanol  
 ("HELIONAL", trade name of International Flavors & Fragrances  
 Inc.), cis-3-hexenyl methylcarbonate ("LIFFAROME", trade  
 name of International Flavors & Fragrances Inc.),  
 2-methyl-3-(4-tert-butylphenyl)-propanal ("LILIAL",  
 15 Givaudan-Roure Corporation),  
 4(3)-(4-hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxald  
 ehyde ("LYRAL", trade name of International Flavors &  
 Fragrances Inc.), methyl anthranilate, methyl  $\beta$ -naphthyl  
 ketone,  
 20 4(3)-(4-methyl-3-pentenyl)-3-cyclohexene-1-carboxaldehyde  
 ("MYRAC ALDEHYDE", trade name of International Flavors &  
 Fragrances Inc.),  
 2-(2-(4-methyl-3-cyclohexen-1-yl)propyl)cyclopentanone  
 ("NECTARYL", trade mark of Givaudan-Roure Corporation),  
 25 nookkatone, phenylacetaldehyde, 2-cyclohexylpropanal

("POLLENAL II", trade name of Kao Corporation),  
 8-methoxytricyclodecane-4-carboxaldehyde ("SCENTENAL",  
 trade name of Firmenich, Inc.), thymol, trans-2-decenal,  
 trans-2-hexanal, tricyclodecenyl acetate, tricyclodecenyl  
 5 propionate, and  
 1-acetyl-2,6,10-trimethylcyclododeca-2,5,9-triene  
 ("TRIMOFIX", trade name of International Flavors & Fragrances  
 Inc.),  
 (F) 1-octen-3-yl acetate, 2,5-decadienal,  
 10 2,4-octadienal, 2,6-nonadienal, 1,3-oxathiane  
 2-methyl-4-propionate, 2-methylbutyl 2-methylbutyrate,  
 2-methylbutyl isovalerate, 2-methylbutyl valerate,  
 acetophenone, acetylcedrene [ethanone,  
 1-(2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-1H-3a,7-met  
 15 hanoazulen-5-yl)- $\beta$ -methylnaphthyl ketone,  $\alpha$ -damascon,  
 hexanol, hexanal, heptanal, allylionone, allyl heptanoate,  
 allyl hexanoate,  $\alpha$ -pinene,  $\alpha$ -terpinene,  $\beta$ -damascon,  
 benzaldehyde, benzyl acetate, benzyl propionate, camphor,  
 2-methyl-3-(para-methoxyphenyl)-propylaldehyde  
 20 ("CANTHOXAL", trade name of International Flavors & Fragrances  
 Inc.), cedrene,  
 3-propylbicyclo(2.2.1)hept-5-ene-2-carbaldehyde  
 ("CHRYSANTHAL", trade name of Quest International B.V.),  
 cinnamic alcohol, cis-3-hexenol, cis-3-hexenyl propionate,  
 25 cis-jasmone, citral, citronellal, citronellol, citronellyl



nitrile, thiol-added or substituted products of limonene (for  
 example, "CORPS PAMPLEMOUSSE", trade name of Prodasynt S.A.),  
 methyl cyclopentylidenacetate, dimethylbenzylcarbinyl  
 acetate,  
 5 1-(2,6,6-trimethyl-1,3-cyclohexadien-1-yl)-2-buten-1-one  
 ("DAMASCENONE", trade name of Firmenich, Inc.),  
 1-(2,6,6-trimethyl-3-cyclohexen-1-yl)-2-buten-1-one  
 ("DELTA-DAMASCONE", trade name of International Flavors &  
 Fragrances Inc.), dihydrojasnone, ethylmaltol, ethyl  
 10 trimethylhexanoate, ethyl 2-methylbutylate, ethyl butyrate,  
 ethyl heptanoate, ethyl hexanoate, ethyl nonanoate, ethyl  
 octanoate, ethyl propionate, ethyl valerate, fenchone,  
 p-ethyl-2,2-dimethylhydrocinnamaldehyde ("FLORALOZONE",  
 trade name of International Flavors & Fragrances Inc.), ethyl  
 15 2-tert-butylcyclohexylcarbonate ("FLORAMAT", trade name of  
 Kao Corporation), 2-sec-butylcyclohexanone ("FRESCOMENTHE",  
 trade name of Givaudan-Roure Corporation),  
 ethyl-2-methyl-1,3-dioxolan-2-acetate, geraniol, geranyl  
 nitrile, 3-methyl-5-prop-2-cyclohexen-1-one ("GRAVENONE",  
 20 trade name of Dragoco, Inc.), hexylcinnamic aldehyde, heptyl  
 cyclopentanone, iron, isobutyl salicylate,  
 1-(2,4,4-trimethyl-2-cyclohexen-1-yl)-2-buten-1-one  
 ("ISO-DAMASCONE", trade name of Dragoco, Inc.), L-carvone,  
 3,7-dimethyl-2(3),6-nonadienenitrile ("LEMONILE", trade  
 25 name of Givaudan-Roure Corporation), limonene, L-menthol,

menthone, maltol, 3-methyl-5-phenylpentanal ("MEFRANAL",  
trade name of Quest International B.V.), methyl  
dihydrojasmonate, methyl benzoate, methyl butyrate, methyl  
geranylate, methyl octanoate, methyl salicylate, methyl  
5 valerate, butyl butyrate, hexyl acetate, hexylcyclopentanone,  
amyl valerate, amyl butyrate, amyl propionate,  
orthomethoxycinnamic aldehyde, o-tert-butylcyclohexyl  
acetate, para-amylcyclohexanone, paracymene, phenylethyl  
alcohol, phenylethylpropionate, phenylhexanol, phenylpropyl  
10 acetate, 4-methyltricyclo[6.2.1.02.7]undecan-5-one  
("PLICATONE", trade name of Firmenich, Inc.),  
p-menthane-8-thiol-3-one, p-tert-butylcyclohexyl acetate,  
styrallyl acetate, terpineol, terpinolene, terpinyl  
propionate, trans-2-hexanal, trans-2-hexenyl acetate,  
15 trimethylhexanal,  
2,4-dimethyl-3-cyclohexenylcarboxaldehyde ("TRIPLAL",  
trade name of International Flavors & Fragrances Inc.),  
2,2,5-trimethyl-5-pentylcyclopentanone ("VELOUTONE", trade  
name of Firmenich, Inc.), and  
20 4-cyclohexyl-4-methyl-2-pentanone ("VETIVERTONE", trade  
name of Quest International B.V.), and  
(G) allyl anthranillate,  
1-(2-tert-butylcyclohexyloxy)-2-butanol ("AMBER CORE",  
trade name of Kao Corporation), 7-cyclohexadecenolide  
25 (ambrettolide),

(3 $\alpha$ , 6, 6, 9 $\alpha$ -tetramethyldodecahydronaphtho[2.1-b]furan  
("AMBROXANE", trade name of Kao Corporation),  
2-ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-  
ol ("BACDANOL", trade name of International Flavors &  
5 Fragrances Inc.; "BANGALOL", trade name of Givaudan-Roure  
Corporation), benzophenone, benzyl alcohol, caryophyllene,  
6,7-dihydro-1,1,2,3,3,-pentamethyl-4(5H)-indanone  
("CASHMERAN", trade name of International Flavors & Fragrances  
Inc.), 4-acetyl-6-tert-butyl-1,1-dimethylindan  
10 ("CELESTOLIDE", trade name of International Flavors &  
Fragrances Inc.), cis-3-hexenyl anthranylate, 4-hexenyl  
salicylate, coumarin, cyclopentadecanone, dynascone,  
3-methyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-4-penten-  
2-ol ("EVANOL", trade name of Givaudan-Roure Corporation),  
15 ethyl salicylate, eugenol acetate, geranyl cyclopentanone,  
oxacyclohexadecen-2-one ("HABANOLIDE", trade name of  
Firmenich, Inc.), heliotropine, heliotropyl acetone,  
hexadecanolide,  $\alpha$ -ionone,  $\beta$ -ionone,  
7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-tetramethylnap  
20 hthalene ("ISO E SUPER", trade name of International Flavors  
& Fragrances Inc.), isobutyl anthranylate, isoeugenol acetate,  
 $\delta$ -decalactone,  $\alpha$ -methylionone,  $\gamma$ -methylionone,  
3-methylcyclopentadecenone ("MUSCENONE DELTA", trade name of  
Firmenich, Inc.), 3-methylcyclopentadecanone (muscone),  
25 ethylene dodecanedioate ("MUSK C-14", trade name of Takasago

International Corporation), musk ketone,  
11-oxa-16-hexadecanolide ("MUSK R-1", trade name of Quest  
International B.V.), 5-cyclohexadecen-1-one ("MUSK TM-II",  
trade name of Soda Aromatic Co., Ltd.), butyl anthranilate,  
5 hexyl salicylate, amyl salicylate, 10-oxa-16-hexadecanolide  
("OXALIDE", trade name of Takasago International Corporation),  
4,6,6,7,8,8-hexamethyl-1,3,4,6,7,8-hexahydrocyclopentaben  
zopyran ("PEARLIDE PURE", trade name of Kao Corporation),  
6-acetyl-1,1,2,4,4,7-hexatetralin ("TONALIDE", tradename of  
10 PFW Aroma Chemicals B.V.), cis-8-cyclohexadecanolide  
("SCENTOLIDE", trade name of Synarom, Inc.),  
3-methyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-pentan-2-  
ol ("SANDALORE", trade name of Givaudan-Roure Corporation),  
2-methyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1  
15 -ol ("SANDALMYSORE CORE", trade name of Kao Corporation),  
4-(parahydroxyphenyl)-2-butanone ("RASPBERRY KETONE", trade  
name of Takasago International Corporation),  
3,3-dimethyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-4-pen  
ten-2-ol ("POLYSANTOL", trade name of Firmenich, Inc.),  
20 2-cyclohexylidene-2-phenyl acetonitrile ("PEONILE", trade  
name of Givaudan-Roure Corporation), and  
cyclopentadecanolide ("PENTALIDE", trade name of Soda  
Aromatic Co., Ltd.).

As the musk employed as ingredient (A) in the fragrance composition according to the present invention, a synthetic musk can be mentioned. Specific examples include muscone, civetone, cyclopentadecanone, 5-cyclohexadecen-1-one, 5 cyclopentadecanolide, ambrettolide, 12-ketocyclopentadecanolide, cyclohexadecanolide, 7-cyclohexadecanolide, 12-oxa-16-hexadecanolide, 11-oxa-16-hexadecanolide, 10-oxa-16-hexadecanolide, ethylene brassylate, 3-methycyclopentadecenone (muscenone, 10 NF), cyclopentadenolide (pentalide), ethylenedodecanedioate, musk ketone, 6-acetylhexamethylindan ("PHANTOLID", trade name of PFW Aroma Chemicals B.V.), 4-acetyldimethyl-t-butylindan ("CELESTOLIDE", trade name of International Flavors & Fragrances Inc.), 15 5-acetyltetramethylisopropylindan ("TRASEOLIDE", trade name of Quest International B.V.), 6-acetylhexatetralin ("TENTAROME", trade name of PFW Aroma Chemicals B.V.), tetramethyl-6-ethyl-7-acetyl-tetrahydronaphthalene ("VERSALIDE", trade name of Givaudan-Roure Corporation), 20 formylethyltetramethyltetralin, acetyldimethyltetrahydrobenzindanone ("VITALIDE", trade name of Takasago International Corporation), hexamethylhexahydrocyclopentabenzopyran ("GALAXOLIDE", trade name of International Flavors & Fragrances Inc.), and 25 3-methylcyclopentadecene ("MUSCENONE DELTA", Firmenich,

Inc.). Among these synthetic musks, preferred examples are muscone, ambrettolide, ethylene brassylate, musk ketone, 3-methylcyclopentadecenone (muscenone, NF), cyclopentadecenolide (pentalide),  
5 hexamethylhexahydrocyclopentabenzopyran ("GALAXOLIDE", trade name of International Flavors & Fragrances Inc.), and 3-methylcyclopentadecene ("MUSCENONE DELTA", Firmenich, Inc.).

From the viewpoint of including an amount sufficient  
10 to mask an acid smell, ensuring a harmony in fragrance with other materials and imparting mildness to fragrance, the content of the musk is from 0.1 to 70 wt.%, preferably from 1 to 50 wt.%, more preferably from 2 to 40 wt.% of the fragrance composition.

15 Ingredient (B) employed in the present invention consists of one or more compounds selected from the above-described compounds (i) to (v), although a combination of two or more compounds is preferred.

In ingredient (B) (i) of formula (1), the groups  
20 represented by  $R^1$  and  $R^2$  can each be a linear, branched or cyclic hydrocarbon group, or a group containing a linear, branched or cyclic hydrocarbon group with an oxygen atom or nitrogen atom inserted in at least one carbon-to-carbon bond thereof. It is to be noted that the term "hydrocarbon group"  
25 as used herein includes both saturated and unsaturated ones

and the term "cyclic hydrocarbon group" as used herein includes saturated, unsaturated and aromatic, cyclic hydrocarbon groups. As the atom inserted in the at least one carbon-to-carbon bond, an oxygen atom or a nitrogen atom can be mentioned, with an oxygen atom being preferred. A preferred form of linkage with an oxygen atom contained therein is an ether linkage in a linear ether or cyclic ether.  $R^1$  has from 2 to 14 carbon atoms, while  $R^2$  has from 1 to 15 carbon atoms.

Preferred examples of  $R^1$  and  $R^2$  include alkyl groups, alkenyl groups, cyclic hydrocarbon groups, cyclic hydrocarbyl-alkyl groups, cyclic hydrocarbyl-alkenyl groups, aromatic hydrocarbon groups, aromatic hydrocarbyl-alkyl groups, aromatic hydrocarbyl-alkenyl groups, and monoterpene and other terpene groups.

Examples of the compound of formula (1) include terpenyl esters, aliphatic esters, and aromatic esters. Illustrative of the terpenyl esters of formula (1) are citronellyl propionate, geranyl propionate, linalyl propionate, terpinyl propionate, rhodinyl propionate, neryl propionate, carbonyl propionate, menthyl propionate, bornyl propionate, isobornyl propionate, linalyl butyrate, geranyl butyrate, citronellyl butyrate, rhodinyl butyrate, neryl butyrate, terpenyl butyrate, santalyl butyrate, citronellyl isobutyrate, geranyl isobutyrate, linalyl isobutyrate, rhodinyl isobutyrate, neryl isobutyrate, terpinyl isobutyrate,

linalyl isovalerate, citronellyl isovalerate, geranyl  
isovalerate, menthyl isovalerate, terpinyl isovalerate,  
linalyl hexanoate, citronellyl hexanoate, geranyl hexanoate,  
linalyl octanoate, citronellyl tiglate, geranyl benzoate,  
5 linalyl benzoate, geranyl phenylacetate, citronellyl  
phenylacetate, rhodinyl phenylacetate, menthyl phenylacetate,  
linalyl cinnamate, citronellyl tiglate, geranyl tiglate,  
methyl geranate, ethyl geranate, methyl cyclogeranate, ethyl  
cyclogeranate, and ethylcitronellyl oxalate.

10 Examples of the aliphatic esters of formula (1) include  
ethyl propionate, propyl propionate, allyl propionate, butyl  
propionate, isobutyl propionate, isoamyl propionate, hexyl  
propionate, cis-3-hexenyl propionate, trans-2-hexenyl  
propionate, decenyl propionate, tricyclodecenyl propionate,  
15 methyl butyrate, ethyl butyrate, propyl butyrate, isopropyl  
butyrate, allyl butyrate, butyl butyrate, isobutyl butyrate,  
amyl butyrate, isoamyl butyrate, hexyl butyrate, heptyl  
butyrate, cis-3-hexenyl butyrate, trans-2-hexenyl butyrate,  
octyl butyrate, propylene glycol dibutyrate, cyclohexyl  
20 butyrate, tetrahydrofurfuryl butyrate, methyl isobutyrate,  
ethyl isobutyrate, propyl isobutyrate, isopropyl isobutyrate,  
butyl isobutyrate, isobutyl isobutyrate, isoamyl isobutyrate,  
hexyl isobutyrate, cis-3-hexenyl isobutyrate, 2,4-hexadienyl  
isobutyrate, 1,3-dimethyl-3-butenyl isobutyrate, octyl  
25 isobutyrate, tricyclodecenyl isobutyrate, methyl



2-methylbutyrate, ethyl 2-methylbutyrate, 2-methylbutyl  
 2-methylbutyrate, hexyl 2-methylbutyrate, cis-3-hexenyl  
 2-methylbutyrate, allyl 2-ethylbutyrate, ethyl  
 3-hydroxybutyrate, methyl valerate, ethyl valerate, propyl  
 5 valerate, butyl valerate, isobutyl valerate, amyl valerate,  
 cis-3-hexenyl valerate, methyl isovalerate, ethyl  
 isovalerate, propyl isovalerate, isopropyl isovalerate,  
 allyl isovalerate, butyl isovalerate, isobutyl isovalerate,  
 isoamyl isovalerate, 2-methylbutyl isovalerate, hexyl  
 10 isovalerate, heptyl isovalerate, ethyl  
 tricyclo[5.2.1.0<sup>2,6</sup>]decan-2-yl carboxylate ("FRUITATE", Kao  
 Corporation), and ethyl 2-cyclohexylpropionate ("POIRENATE",  
 Kao Corporation). Preferred are butyl propionate, ethyl  
 butyrate, propyl butyrate, isopropyl butyrate, butyl butyrate,  
 15 isobutyl butyrate, amyl butyrate, isoamyl butyrate,  
 cis-3-hexenyl butyrate, ethyl isobutyrate, butyl isobutyrate,  
 isobutyl isobutyrate, ethyl 2-methylbutyrate, 2-methylbutyl  
 2-methylbutyrate, ethyl valerate, butyl valerate, isobutyl  
 valerate, amyl valerate, ethyl isovalerate, butyl isovalerate,  
 20 isobutyl isovalerate, isoamyl isovalerate, 2-methylbutyl  
 isovalerate, ethyl tricyclo[5.2.1.0<sup>2,6</sup>]decan-2-yl  
 carboxylate ("FRUITATE", Kao Corporation), and ethyl  
 2-cyclohexylpropionate ("POIRENATE", Kao Corporation).

Examples of the aromatic esters of formula (1) include  
 25 ethyl benzylacetoacetate, benzyl propionate, styralyl

propionate, anisyl propionate, phenylethyl propionate,  
 cinnamyl propionate, phenylpropyl propionate,  
 dimethylbenzylcarvinyl propionate, phenoxyethyl propionate,  
 propylene glycol dipropionate, ethyl

5 3-hydroxy-3-phenylpropionate, isobutyl furanpropionate,  
 benzyl butyrate, cinnamyl butyrate, phenylethyl butyrate,  
 dimethylbenzylcarvinyl butyrate, benzyl isobutyrate,  
 p-cresyl isobutyrate, cinnamyl isobutyrate, phenylethyl  
 isobutyrate, phenoxyethyl isobutyrate, phenylpropyl

10 isobutyrate, styrallyl isobutyrate, dimethylbenzylcarvinyl  
 isobutyrate, dimethylpheylethylcarvinyl isobutyrate,  
 decahydro- $\beta$ -naphthyl isobutyrate, benzyl 2-methylbutyrate,  
 phenylethyl 2-methylbutyrate, benzyl valerate, phenylethyl  
 valerate, furfuryl valerate, benzyl isobutyrate, cinnamyl

15 isovalerate, phenylethyl isovalerate, phenylpropyl  
 isovalerate, benzyl hexanoate, benzyl octanoate, phenylethyl  
 octanoate, p-cresyl octanoate, phenylethyl nonaoate, benzyl  
 dodecanoate (benzyl laurate), methyl benzoate, ethyl benzoate,  
 propyl benzoate, isopropyl benzoate, allyl benzoate, isobutyl

20 benzoate, isoamyl benzoate, prenyl benzoate, hexyl benzoate,  
 cis-3-hexenyl benzoate, benzyl benzoate, phenylethyl  
 benzoate, ethyl o-methoxybenzoate, methyl  
 dihydroxydimethylbenzoate, methyl phenylacetate, ethyl  
 phenylacetate, propyl phenylacetate, isopropyl phenylacetate,

25 butyl phenylacetate, isobutyl phenylacetate, isoamyl

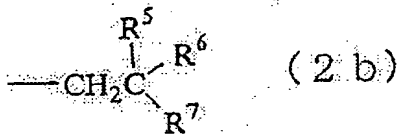
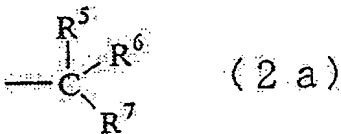
phenylacetate, hexyl phenylacetate, cis-3-hexenyl  
 phenylacetate, benzyl phenylacetate, phenylethyl  
 phenylacetate, p-cresylphenylacetate, eugenylphenylacetate,  
 isoeugenyl phenylacetate, methyl cinnamate, ethyl cinnamate,  
 5 propylcinnamate, isopropyl cinnamate, allyl cinnamate,  
 isobutyl cinnamate, isoamyl cinnamate, benzyl cinnamate,  
 cinnamyl cinnamate, phenylethyl cinnamate, dimethyl  
 phthalate, diethyl phthalate, methyl salicylate, ethyl  
 salicylate, butyl salicylate, isobutyl salicylate, amyl  
 10 salicylate, isoamyl salicylate, allyl salicylate, hexyl  
 salicylate, cis-3-hexenyl salicylate, cyclohexyl salicylate,  
 phenyl salicylate, benzyl salicylate, phenylethyl salicylate,  
 p-cresyl salicylate, allyl phenoxyacetate, ethyl  
 phenylpropionate, benzyl tiglate, phenylethyl tiglate,  
 15 cinnamyl tiglate, benzyl angelate, phenylethyl angelate,  
 cinnamyl angelate, and phenyl angelate.

Preferred are benzyl isovalerate, cinnamyl isovalerate,  
 phenylethyl isovalerate, ethyl benzoate, propyl benzoate,  
 isopropyl benzoate, allyl benzoate, isobutyl benzoate,  
 20 isoamyl benzoate, prenyl benzoate, hexyl benzoate,  
 cis-3-hexenyl benzoate, benzyl benzoate, phenylethyl  
 benzoate, methyl cinnamate, ethyl cinnamate, methyl  
 salicylate, ethyl salicylate, amyl salicylate, isoamyl  
 salicylate, hexyl salicylate, and cis-3-hexenyl salicylate.

25 The content of ingredient (B) (i) is from 0.001 to 80

wt.%, preferably from 1 to 80 wt.%, more preferably from 1.5 to 60 wt.% of the fragrance composition.

In ingredient (B) (ii) of formula (2), the hydrocarbon group or the cyclic hydrocarbon group represented by  $R^4$ , in which an  $\alpha$ -carbon or  $\beta$ -carbon to an ether linkage in an ester group in formula (2) has a branched chain, can be a group represented by the following formula (2a) or (2b):



wherein  $R^5$  represents a hydrogen atom or an alkyl or alkenyl group having from 1 to 14 carbon atoms or forms an unsaturated bond with a carbon atom in  $R^6$  or  $R^7$ ,  $R^6$  and  $R^7$  each represents an alkyl or alkenyl group having 1 to 14 carbon atoms or  $R^5$  and  $R^6$  are fused together to form a saturated or unsaturated, cyclic hydrocarbon group having 4 to 8 carbon atoms, said cyclic hydrocarbon group being optionally substituted by one or more alkyl or alkenyl groups.

Examples of the compound of formula (2) include terpenyl esters of formic acid and acetic acid, fatty esters of formic acid and acetic acid, and aromatic esters of formic acid and acetic acid. Illustrative of the terpenyl esters of formic

acid and acetic acid are linalyl formate, citronellyl formate, geranyl formate, neryl formate, rhodinyl formate, terpinyl formate, cedryl formate, caryophyllene formate, ocimenyl acetate, citronellyl acetate, lavandulyl acetate,

5 isodihydrolavandulyl acetate, nerolidol acetate, geranyl acetate, linalyl acetate, myrcenyl acetate, dihydromyrcenyl acetate, rhodinyl acetate, neryl acetate, tetrahydromugol acetate, ethyllinalyl acetate, carvyl acetate, dihydrocarvyl acetate, dihydrocuminyl acetate, terpinyl acetate,

10 dihydrocarbinyl acetate, isopregol acetate, menthyl acetate, dihydroterpinyl acetate (menthanyl acetate), citryl acetate, myrcenyl acetate, nopyl acetate, penchyl acetate, n-bornyl acetate, isobornyl acetate, guaiyl acetate, cedryl acetate, verbenyl acetate, caryophyllene acetate, santalyl acetate,

15 vetiveryl acetate, and guaiac acetate. Preferred is linalyl acetate.

Examples of the aliphatic esters of formic acid and acetic acid include "APHERMATE" (trade name of International Flavors & Fragrances Inc.), oxyoctaline formate, isopropyl

20 acetate, isobutyl acetate, 3-octyl acetate, cyclohexyl acetate, p-t-butylcyclohexyl acetate, 2,4-dimethyl-3-cyclohexenylmethyl acetate,  $\alpha$ ,3,3,-trimethylcyclohexanemethyl acetate ("ROSAMUSK", trade name of International Flavors & Fragrances Inc.),

25 o-t-butylcyclohexyl acetate, 1-ethylcyclohexyl acetate,

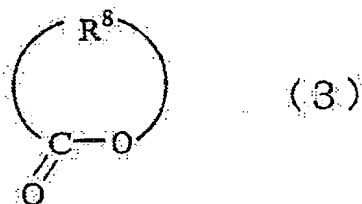
tricyclodecenyl acetate,  
 2,4-dimethyl-cyclohexen-1-methanyl acetate ("FLORALATE",  
 trade name of International Flavors & Fragrances Inc.),  
 decahydro- $\beta$ -naphthyl acetate,  
 5 1-acetoxy-2-sec-butyl-1-vinylcyclohexane, tricyclodecyl  
 acetate, tetrahydrofurfuryl acetate,  
 3-pentyltetrahydropyranyl acetate ("JASMAL", trade name of  
 International Flavors & Fragrances Inc.),  
 5-methyl-3-butyltetrahydropyranyl acetate ("JASMELIA",  
 10 trade name of International Flavors & Fragrances Inc.), ethyl  
 acetoacetate, ethyl 2-hexylacetoacetate, methyl  
 cyclopentylidenacetate, allyl cyclohexylacetate, isopropyl  
 cyclohexenylacetate, and o-t-butylcyclohexyl acetate.  
 Preferred are tricyclodecenyl acetate and  
 15 o-t-butylcyclohexyl acetate.

Examples of the aromatic esters of formic acid and acetic  
 acid include benzyl formate, methylphenylcarbinyl acetate,  
 styrallyl acetate, p-methylbenzyl acetate, anisyl acetate,  
 piperonyl acetate, acetyl vanillin, rosephenone, hydratropyl  
 20 acetate, 2,4-dimethylbenzyl acetate, cuminyl acetate,  
 dimethylbenzylcarbinyl acetate, heliotropyl acetate, eugenol  
 acetate, isoeugenol acetate, phenylglycol diacetate,  
 dimethylphenylcarbinyl acetate,  
 phenylethylmethylethylcarbinyl acetate, veticol acetate,  
 25  $\alpha$ -amylcinnamyl acetate, decahydro- $\beta$ -naphthyl acetate, and

furfuryl acetate.

The content of ingredient (B) (ii) is from 0.001 to 80 wt.%, preferably from 1 to 80 wt.%, more preferably from 1.5 to 60 wt.% of the fragrance composition.

5 As ingredient (B) (iii), i.e., the lactones, lactones having total carbon numbers of from 5 to 14, for example, compounds represented by the following formula (3):



wherein  $\text{R}^8$  represents a hydrocarbon group having from 4 to 10 13 carbon atoms can be mentioned.

In formula (3), the hydrocarbon group represented by  $\text{R}^8$  is a linear or branched hydrocarbon group which may contain a cyclic hydrocarbon group at least as a part thereof. Specifically, linear or branched alkylene groups and 15 alkenylene groups can be mentioned, and these alkylene groups and alkenylene groups may each contain one or more aromatic rings.

Examples of the compounds of formula (3) include  $\gamma$ -butyrolactone,  $\gamma$ -valerolactone, angelic lactone, 20  $\gamma$ -hexalactone,  $\gamma$ -heptalactone,  $\gamma$ -octalactone,  $\gamma$ -nonalactone, 3-methyl-4-octanolide (whisky-lactone),  $\gamma$ -decalactone,  $\gamma$ -undecalactone,  $\gamma$ -dodecalactone,  $\gamma$ -jasmolactone

(7-decenolactone),  $\delta$ -hexalactone,  
 4,6,6(4,4,6)-trimethyltetrahydropyran-2-one,  $\delta$ -octalactone,  
 $\delta$ -nonalactone, 2H-1-benzopyran-2-one,  $\delta$ -decalactone,  
 $\delta$ -2-decenolactone,  $\delta$ -undecalactone,  $\delta$ -dodecalactone,  
 5  $\delta$ -tridecalactone,  $\delta$ -tetradecalactone, lactoscatone,  
 $\epsilon$ -decalactone,  $\epsilon$ -dodecalactone, cyclohexyllactone,  
 jasminlactone, cis-jasmonelactone, methyl- $\gamma$ -decalactone,  
 tetrahydro-6-(3-pentenyl)-2H-pyran-2-one,  
 (E)-dec-8-en-5-olide ("JASMOLARITONE", trade name of  
 10 Firmenich, Inc.), tetrahydro-6-(3-hexenyl)-2H-pyran-2-one,  
 (Z)-undec-8-en-5-olide ("JASMOLACTONE", trade name of  
 Bedoukian Research Inc.), menthalactone, and methyl  
 dihydrojasmonate. Preferred are  $\gamma$ -octalactone,  
 $\gamma$ -nonalactone,  $\gamma$ -decalactone,  $\gamma$ -undecalactone,  
 15  $\gamma$ -dodecalactone,  $\gamma$ -jasmolactone (7-decenolactone),  
 $\delta$ -octalactone,  $\delta$ -nonalactone, 2H-1-benzopyran-2-one,  
 $\delta$ -decalactone,  $\delta$ -2-decenolactone, and  $\delta$ -undecalactone.

The content of ingredient (B) (iii) is from 0.001 to 80  
 wt.%, preferably from 0.001 to 60 wt.%, more preferably from  
 20 0.002 to 0 40 wt.% of the fragrance composition.

As ingredient (B) (iv), i.e., the ketone compounds having  
 a cyclic or chain skeleton and having total carbon numbers  
 of from 5 to 14, terpenyl ketones, aliphatic linear ketones  
 and aliphatic cyclic ketones can be mentioned.

25 Examples of the terpenyl ketones include camphor,



carvone, dihydrocarvone, pulegone, menthone, piperitenone,  
 diosphenol, fenchone, perpenone, geranylacetone,  
 farnesylacetone, acetylcedrene (cedryl methyl ketone),  
 oxocedrane (cedranone, cedrenone), acetylcaryophyllene,  
 5 isolongifolanone (isolongifolane ketone), nootkatone, ionone,  
 pseudoionone, methylionone, allylionone, irone, damascone,  
 damascenone, isodamascone,  
 1-(3,3-dimethyl-6(1)-cyclohexen-1-yl)-pent-4-en-1-one  
 ("DYNASCONE"), and trimethyl cyclohexenyl butenone  
 10 ("IRITONE", trade name of International Flavors & Fragrances  
 Inc.). Preferred are ionone, damascone, damascenone,  
 isodamascone, and  
 1-(3,3-dimethyl-6(1)-cyclohexen-1-yl)-pent-4-en-1-one  
 ("DYNASCONE").

15           Examples of the aliphatic linear ketones include acetoin,  
 diacetyl, methyl amyl ketone, ethyl amyl ketone, 2-pentanone,  
 3-hexanone, 2-heptanone, 3-heptanone, 4-heptanone,  
 3-octanone, 2-nonanone, 3-nonanone, 2-undecanone, methyl  
 isopropyl ketone, methyl hexyl ketone, methyl nonyl ketone,  
 20 methylheptenone, ethyl isoamyl ketone, 2-tridecanone,  
 mesityl oxide, butylidene acetone, methyl heptadienone,  
 methyl heptenone, dimethyl octenone, methylene  
 tetramethylheptanone ("KOAVONE", trade name of International  
 Flavors & Fragrances Inc.), 5-hydroxy-4-octanone (butyrolin),  
 25 3-hydroxymethyl-2-nonanone, 2,3-pentanedione,

2,3-hexanedione, 3,4-hexanedione, 2,3-heptanedione, acetyl  
isovaleryl, 2-butyl-1,4-dioxaspiro[4.4]nonane ("JASMONE",  
trade name of Henkel Corporation), and  
2,2,5,5-tetramethyl-4-isopropyl-1,3-dioxane.

5           Examples of the aliphatic cyclic ketones include  
amylcyclopentanone, amylcyclopentenone,  
2-cyclopentylcyclopentanone, hexylcyclopentanone,  
butylcyclopentanone, maltol, ethyl maltol,  
2,5-dimethyl-4-hydroxyfrانونe,  
10   4,5-dimethyl-3-hydroxy-5H-furan-2-one ("SUGARLACTONE",  
trade name of Soda Aromatic Co., Ltd.), o-t-butylcyclohexanone,  
p-t-butylcyclohexanone, amylcyclopentanone,  
heptylcyclopentanone, dihydrojasmonone, cis-jasmonone,  
isojasmonone, trimethylpentylcyclopentanone,  
15   3-methyl-5-(2,3,3-trimethyl-3-cyclopentenyl)-3-penten-2-o  
ne ("SANDEX", trade name of Givaudan-Roure Corporation),  
cycloten, 3,5-dimethyl-1,2-cyclopentadione,  
3,4-dimethyl-1,2-cyclopentadione, 3,3-dimethylcyclohexyl  
methyl ketone, 1-acetyl-3,3-dimethyl-1-cyclohexene,  
20   2-sec-butylcyclohexanone,  
3-methyl-5-propyl-2-cyclohexenone, cryptone,  
p-t-pentylcyclohexanone,  
2,3,5-trimethyl-4-cyclohexenyl-1-methyl ketone ("METHYL  
CYCLOCITRON", trade name of International Flavors & Fragrances  
25   Inc.), nerone, 4-cyclohexyl-4-methyl-2-pentanone,

cyclohexenyl cyclohexanone, 2,4-di-t-butylcyclohexanone  
("CYCLOWOOD", trade name of Takasago International  
Corporation),  
3-methyl-4-(2,4,6-trimethyl-3-cyclohexenyl)-3-buten-2-one  
5 ("METHYL IRITONE", trade name of International Flavors &  
Fragrances Inc.), allylionone,  
2,6,6-trimethyl-2-cyclohexane-1,4-dione,  
2-acetyl-3,3-dimethylnorbornane,  
6-ethylideneoctahydro-5,8-methano-2H-1-benzopyran-2-one  
10 ("FLOREX", trade name of International Flavors & Fragrances  
Inc.), 4-methyltricyclo[6.2.1.0<sup>2.7</sup>]undecan-5-one  
("PLICATONE", trade name of Firmenich, Inc.),  
6,7-dihydro-1,1,2,3,3,-pentamethyl-4(5H)-indanone  
("CASHMERAN", trade name of International Flavors & Fragrances  
15 Inc.), 4(5)-acetyl-7,7,9-trimethylbicyclo[4.3.0]-1-nonene  
("ATRINON", trade name of Henkel Corporation),  
acetylisopropylmethylbicyclooctene,  
4-cyclohexyl-4-methyl-2-pentanone,  
p-menthen-6-ylpropanone ("NERONE", trade name of  
20 Givaudan-Roure Corporation),  
2,2,5-trimethyl-5-pentylcyclopentanone,  
ethoxyvinyltetramethylcyclohexanone,  
dihdropentamethylindanone,  
7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-naphthalene  
25 ("ISO E SUPER", trade name of International Flavors &

Fragrances Inc.),

2,6,7-trimethyl-1-acetyl-2,5,9-cyclododecatriene

("TRIMOFIX", trade name of International Flavors & Fragrances Inc.), acetylcedrene [ethanone,

5 1-(2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-1H-3a,7-methanoazulen-5-yl)- $\beta$ -methylnaphthyl ketone.

Preferred is

7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-naphthalene

10 ("ISO E SUPER", trade name of International Flavors & Fragrances Inc.).

The content of ingredient (B)(iv) is from 0.001 to 80 wt.%, preferably from 0.01 to 50 wt.%, more preferably from 0.1 to 30 wt.% of the fragrance composition.

15 As ingredient (B)(v), i.e., the aldehydes, aldehydes having total carbon numbers of from 5 to 14, for example, compounds represented by the following formula (4):



20 wherein  $R^9$  represents a hydrocarbon group having from 4 to 13 carbon atoms and optionally containing an oxygen atom or nitrogen atom inserted in at least one carbon-carbon bond thereof can be mentioned.

The group represented by  $R^9$  can be a linear, branched or cyclic hydrocarbon group, or a group containing a linear, branched or cyclic hydrocarbon group with an oxygen atom or  
25 nitrogen atom inserted in at least one carbon-to-carbon bond

thereof. It is to be noted that the term "hydrocarbon group" as used herein includes both saturated and unsaturated ones and the term "cyclic hydrocarbon group" as used herein includes saturated, unsaturated and aromatic, cyclic hydrocarbon groups. As the atom inserted in the at least one carbon-to-carbon bond, an oxygen atom or a nitrogen atom can be mentioned, with an oxygen atom being preferred. A preferred form of linkage with an oxygen atom contained therein is an ether linkage in a linear ether or cyclic ether.

Preferred examples of  $R^9$  include alkyl groups, alkenyl groups, cyclic hydrocarbon groups, cyclic hydrocarbyl-alkyl groups, cyclic hydrocarbyl-alkenyl groups, aromatic hydrocarbon groups, aromatic hydrocarbyl-alkyl groups, aromatic hydrocarbyl-alkenyl groups, and monoterpene and other terpene groups.

Examples of ingredient (B) (v), i.e., the aldehydes include undecenal, heptanal, octanal, undecanal, dodecanal, 2-methylundecanal, citral, geranial, neral, citronellal, 3,7-dimethyloctanal (tetrahydrocitral), hydroxycitronellal, methoxycitronellal,  $\alpha$ -methylenecitronellal ("BENGAMAL", tradename of International Flavors & Fragrances Inc.), perilla aldehyde, methoxy dihydrocitronellal, citronellyloxy acetaldehyde, geranyloxy acetaldehyde, mirtenal, caryophyllene aldehyde, 3-ethoxy-4-hydroxybenzaldehyde, and 4-hydroxy-3-methoxybenzaldehyde. Preferred are undecenal,

heptanal, octanal, undecanal, dodecanal, and  
2-methylundecanal.

The content of ingredient (B) (v) is from 0.001 to 80  
wt.%, preferably from 0.01 to 70 wt.%, more preferably from  
5 0.1 to 50 wt.% of the fragrance composition.

These ingredients (B) can be used either singly or in  
combination. Further, the content of ingredient (B) can  
preferably be from 0.001 to 80 wt.% of the fragrance composition  
from the viewpoint of improvements in scent and tastefulness.

10 Ingredient (C), i.e., the hydrocarbon having a total  
carbon number of from 5 to 15 can be a terpenyl hydrocarbon.  
Illustrative are  $\alpha$ -pinene,  $\beta$ -pinene, camphene, myrcene,  
dihydromyrcene, limonene, dipentene, terpinene, terpinolene,  
carene, allo-ocimene, ocimene,  $\alpha$ -phellandrene, p-cymene,  
15  $\beta$ -caryophyllene,  $\beta$ -farnesene, bisabolene, cedrene, cadinene,  
valencene, tsujopsene, da-i-ene, and longifolene. Preferred  
are  $\alpha$ -pinene,  $\beta$ -pinene, and limonene.

These ingredients (C) can be used either singly or in  
combination, although it is preferred to use two or more of  
20 them. The content of ingredient (C) in the fragrance  
composition differs depending upon the kinds and combination  
of ingredients used, but can be preferably from 0.001 to 90  
wt.%, more preferably from 0.01 to 70 wt.%, even more preferably  
from 0.1 to 40 wt.% from the standpoint of amount sufficient  
25 to mask an acid smell, ensuring a balance with other materials,

and achieving improvements in scent and tastefulness.

From the standpoint of enhancing the scent emitted, making improvements in the refreshing sensation and to give a more defined body for the fragrance, it is preferred to incorporate, in addition to the above-described ingredients, a sulfur-containing compound as an ingredient (D) in the fragrance composition according to the present invention. As the sulfur compounds, an organosulfur compound such as a thiol compound, sulfide compound, disulfide compound, thioaldehyde compound or cyclic thioether compound can be mentioned. Specific examples include propyl mercaptan, isopropyl mercaptan, 2-methyl-3-buthanethiol, allylmercaptan, isoamyl mercaptan, thiogeraniol, limonenethiol, 8-mercaptomenthone (sulfox), phenylmercaptan, o-thiocresol, 2-ethylthiophenol, 2-naphthylmercaptan, furfuryl mercaptan, 2-methyl-3-franthiol, dimethyl sulfide, dimethyl disulfide, dimethyl trisulfide, methylpropyl disulfide, methylpropyl trisulfide, propyl disulfide, dipropyl trisulfide, diallyl trisulfide, diallyl disulfide, dibutyl sulfide, methionol, 3-methylthio-1-hexanol, methional, mentho sulfide, dithiospirolactone, furfurylmethyl sulfide, 2-methyl-5-methylthiofuran, methylfuryl disulfide, furfuryl disulfide, thiophene, tetrahydrothiophene, 3-thiophenecarboxaldehyde, 5-methyl-2-thiophenecarboxaldehyde,

tetrahydrothiophen-3-one, trithioacetone,  
 2-methyl-4-propyl-1,3-oxathiane, thioglycolic acid, methyl  
 ethylthioacetate, ethyl methylthioacetate,  
 2-methylmercaptopropionic acid, pineapple mercaptan, ethyl  
 5 3-methylthiopropionate, ethyl thioacetate, furfuryl  
 thioacetate, furfuryl thiopropionate, methyl thiobutyrate,  
 methylmethane thiosulfonate, allyl isothiocyanate, benzyl  
 isothianate, thialdine, 2-methyl-4-propyl-1,3-oxathiane,  
 p-menthane-8-thiol-3-one, p-mentene-8-thiol, and methyl  
 10  $\beta$ -methylthiopropionate.

From the standpoint of the amount sufficient to mask  
 an acid smell and ensuring a balance with other materials,  
 the content of the sulfur compound in the fragrance composition  
 can be preferably from 0.00001 to 1 wt.%, more preferably from  
 15 0.0001 to 0.5 wt.%, even more preferably from 0.0002 to 0.4  
 wt.%.

The fragrance composition according to the present  
 invention can also contain  
 1-(2-t-butylcyclohexyloxy)-2-butanol,  
 20 dodecahydro-3a,6,6,9a-tetramethyl-naphtho[2.1-b]furan,  
 2-ethoxynaphthalene, 2-methoxynaphthalene,  
 1H-3a,7-methanoazulene,  
 octahydro-6-methoxy-3,6,8,8-tetramethyl-,  
 [3R-(3 $\alpha$ ,3 $\alpha$  $\beta$ ,6 $\beta$ ,7 $\beta$ ,8 $\alpha$  $\alpha$ )], 2-oxybicyclo[2.2.2]octane,  
 25 1,3,3-trimethyl, 3,7,-dimethyl-2,6-octadienenitrile,



4,4a,5,9b-tetrahydroindeno[1,2d]-1,3-dioxine,  
tetrahydro-4-methyl-2-(2-methyl-1-propenyl)-2H-pyran,  
cyclohexanol,  
3-(5,5,6-trimethylbicyclo[2.2.1]hept-2-yl)-cyclohexanol,  
5 2-tridecenitrile, 2-methoxy-4-allylphenol,  
3-methyl-5-phenyl-1-pentanol,  
1-(2-t-butylcyclohexyloxy)-2-butanol, and/or  
2-methyl-4-(2,2,3-trimethyl-3-cyclopentene-1-yl)-2-buten-  
1-ol. From the viewpoint of imparting distinctiveness to the  
10 fragrance, the content of such an additional fragrant material  
may preferably be from 0.001 to 50 wt.% of the fragrance  
composition.

In addition, the fragrance composition according to the  
present invention can also contain one or more of alcohols,  
15 polyhydric alcohols and ethers.

Further, the present invention contains a fragrant  
material which is stable in acidic hair cosmetic compositions,  
especially acidic shampoos, and also contains a fragrant  
material which gives off a good scent from foam and also from  
20 a bottle mouth and has an excellent lasting scent. The fragrant  
materials included in ingredient (E) are each characterized  
by the abundant release of scent from foam, the fragrant  
materials included in ingredient (F) are each characterized  
by the abundant release of a scent from a bottle mouth, and  
25 the fragrant materials included in ingredient (G) are each

characterized by the good persistence of scent. A combination of fragrant materials selected as desired from the ingredients (E), (F) and (G) makes it possible to obtain a well-balanced, excellent fragrance composition which is a fragrance giving off a good scent from foam and from the bottle mouth, and the persistence of scent notes.

From the viewpoint of giving off a good scent upon application of a hair cosmetic composition in which the fragrance composition according to the present invention is added, the content of ingredient (E) in the fragrance composition is from 10 wt.% to 70 wt.%, preferably from 10 wt.% to 60 wt.%, more preferably from 15 wt.% to 60 wt.%. From the viewpoint of giving off a good scent from a bottle mouth, the content of ingredient (F) in the fragrance composition is from 5 wt.% to 60 wt.%, preferably from 5 wt.% to 55 wt.%, more preferably from 10 wt.% to 50 wt.%. From the viewpoint of providing an excellent lasting scent, the content of ingredient (G) in the fragrance composition is from 10 wt.% to 70 wt.%, preferably from 10 to 60 wt.%, more preferably from 10 wt.% to 50 wt.%.

According to the present invention, a hair cosmetic composition can be formulated with the above-described fragrance composition contained therein. As the fragrance composition according to the present invention is excellent in long-term stability under high-temperature conditions and

can mask a smell peculiar to an acid hair cosmetic composition, it is useful as a fragrance composition for acid hair cosmetic compositions, especially hair cosmetic compositions whose pHs are preferably from 1 to 5, more preferably from 2 to 4 (even  
5 more preferably, from 3 to 4). The hair cosmetic compositions of pH 1 to 5 according to the present invention can include hair cleansing compositions, rinses, treatments, conditioning agents, hair packs, hair creams, styling hair care products, hair tonics, hair restorers, hair colognes and  
10 the like, each of which has a pH of from 1 to 5, but excludes hair manicures, hair dyes, and permanent wave solutions. Among these, those used by washing them off, such as hair cleansing compositions, e.g., shampoos and conditioning shampoos, and hair rinses are preferred. It is to be noted  
15 that the term "hair cosmetic composition having a pH of 1 to 5" (25°C) as used herein means a hair cosmetic composition whose pH is from 1 to 5 when the undiluted hair cosmetic composition is diluted 20-fold with water.

A hair cosmetic composition having a pH of 1 to 5 can  
20 be prepared with a similar formula as an ordinary hair cosmetic composition except that its pH is controlled from 1 to 5. Accordingly, an oil ingredient, a conditioning agent, a humectant, a viscosity increasing agent, a viscosity controlling agent, an emulsifier, a colorant, a stabilizer,  
25 an ultraviolet absorber, a preservative, a pH adjuster and

the like are added as needed in addition to one or more surfactants as a cleansing ingredient. As the surfactants, anionic surfactants, nonionic surfactants, and amphoteric surfactants can be mentioned. Examples of the anionic surfactants include polyoxyethylene alkyl ether sulfates, polyoxyethylene alkenyl ether sulfates, alkyl sulfates, and polyoxyalkylene alkyl phenyl ether sulfates, especially sulfate-type anionic surfactants such as polyoxyethylene alkyl ether sulfates and alkyl sulfates; and sulfonates and carboxylates such as alkyl sulfosuccinate salts, polyoxyalkylene alkyl sulfosuccinate salts, higher fatty acid salts, and alkane sulfonate salts.

Examples of the nonionic surfactants include polyoxyalkylene sorbitan fatty acid esters, polyoxyalkylene sorbitol fatty acid esters, polyoxyalkylene glycerol fatty acid esters, polyoxyalkylene fatty acid esters, polyoxyalkylene alkyl ethers, polyoxyalkylene alkyl phenyl ethers, polyoxyalkylene (hydrogenated) castor oils, sucrose fatty acid esters, triglycerin alkyl ethers, polyglycerin fatty acid esters, fatty acid alkanolamides, and alkyl glycosides. Among these, preferred are alkyl glycosides, polyoxyalkylene (C<sub>8</sub>-C<sub>20</sub>) fatty acid esters, polyoxyethylene sorbitan fatty acid esters, polyoxyethylene hydrogenated castor oil, and fatty acid alkanolamides. As the fatty acid alkanolamides, those having from 8 to 18 carbon atoms,

especially those containing acyl groups of from 10 to 16 carbon atoms are preferred. As the fatty acid alkanolamides, either monoalkanolamides or dialkanolamides are usable, and those containing a hydroxyalkyl group of from 2 to 3 carbon atoms are preferred. Examples include oleic diethanolamide, palm kernel fatty acid diethanolamide, coconut fatty acid diethanolamide, lauric diethanolamide, polyoxyethylene coconut fatty acid monoethanolamide, coconut fatty acid monoethanolamide, lauric isopropanolamide, and lauric monoethanolamide.

As the amphoteric surfactants, betaine-type surfactants can be mentioned. Among these, more preferred are betaine alkyldimethylaminoacetates and fatty acid amidopropylbetaines, with fatty acid amidopropylbetaines being preferred. As the fatty acid amidopropylbetaines, those having 8 to 18 carbon atoms, especially those containing acyl groups of from 10 to 16 carbon atoms are preferred, with laurylamidopropylbetaine, palm kernel fatty acid amidopropylbetaine and cocamidopropylbetaine being preferred.

The surfactant can be contained preferably at from 1 to 50 wt.%, more preferably at from 8 to 30 wt.%, even more preferably at from 10 to 22 wt.% in the hair cosmetic composition.

As the cationic surfactants, mono(long-chain alkyl) quaternary ammonium salts are preferred. Specific examples

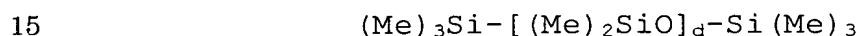
include cetyltrimethylammonium chloride,  
 stearyltrimethylammonium chloride,  
 aralkyltrimethylammonium chloride, and  
 behenyltrimethylammonium chloride, with

5 behenyltrimethylammonium chloride being preferred. Further,  
 the cationic surfactants can also include those formed by  
 adding tertiary amines and the below-described organic salts.

As the oil ingredients, higher alcohols, lanolins,  
 liquid paraffin, higher fatty acids, ester oils, and silicones  
 10 can be mentioned. Examples of the silicones can include the  
 following silicones:

(1) Dimethylpolysiloxanes

Those represented by the following formula can be  
 mentioned as examples.



wherein Me represents a methyl group, and d stands for a value  
 of from 3 to 20,000.

(2) Amino-modified silicones

Preferred examples are those having an average molecular  
 20 weight of from about 3,000 to 100,000 and described under the  
 name of amodimethicones in the third edition of the CTFA  
 Cosmetic Ingredient Dictionary, U.S.A., although various  
 amino-modified silicones are usable. Preferably, these  
 amino-modified silicones are used as aqueous emulsions. As  
 25 commercial products, "SM8704C" (product of Dow Corning Toray

Silicone Co., Ltd.) and "DC929" (product of Dow Corning Corporation) can be mentioned.

(3) Other silicones

In addition to the above-described silicones,  
5 polyether-modified silicones, methylphenylpolysiloxane,  
fatty-acid-modified silicones, alcohol-modified silicones,  
alkoxy-modified silicones, epoxy-modified silicones,  
fluorine-modified silicones, cyclic silicones, and  
alkyl-modified silicones can also be mentioned.

10 The oil ingredient can be contained preferably at from  
0.05 to 10 wt.%, more preferably at from 0.1 to 5 wt.%, even  
more preferably at from 0.3 to 2 wt.% in the hair cosmetic  
composition.

As the conditioning agent, a cationic polymer is  
15 preferred. Examples of the cationic polymer include  
cationized cellulose derivatives, cationic starch,  
cationized guar gum derivatives, homopolymers of  
diallyl(quaternary ammonium) salts, diallyl(quaternary  
ammonium) salt/acrylamide copolymer, quaternized  
20 polyvinylpyrrolidone derivatives, polyglycol-polyamine  
condensation products, vinylimidazolium  
trichloride/vinylpyrrolidone copolymer,  
hydroxyethylcellulose/dimethyldiallylammonium chloride  
copolymer, vinylpyrrolidone/quaternized dimethylaminoethyl  
25 methacrylate copolymer, polyvinylpyrrolidone/alkyl

aminoacrylate copolymers, polyvinylpyrrolidone/alkyl  
aminoacrylate/vinylcaprolactam copolymer,  
vinylpyrrolidone/methacrylamidopropyl-trimethylammonium  
chloride copolymer,  
5 alkylacrylamide/acrylate/alkylaminoalkyl  
acrylamide/polyethylene glycol methacrylate copolymers,  
adipic acid/dimethylaminohydroxypropyl ethylenetriamine  
copolymer ("CARTARETIN", product of Sandoz, Inc., U.S.A.),  
and cationic polymers disclosed in JP-A-53-139734 or  
10 JP-A-60-36407. Preferred examples are cationized cellulose  
derivatives and cationized guar gum derivatives. The  
conditioning agent can be contained preferably at from 0.05  
to 5 wt.%, more preferably at from 0.1 to 3 wt.%, even more  
preferably at from 0.3 to 1 wt.% in the hair cosmetic  
15 composition.

In the hair cosmetic composition according to the present  
invention, an organic acid can be additionally incorporated  
to make improvements in the finish of hair such as sleekness  
and style. Examples of the organic acid include carboxylic  
20 acids such as monocarboxylic acids, dicarboxylic acids,  
hydroxycarboxylic acids and polycarboxylic acids, and  
alkylphosphoric acids. Among these, carboxylic acids,  
especially dicarboxylic acids and hydroxycarboxylic acids are  
preferred. Examples of the dicarboxylic acids include  
25 malonic acid, succinic acid, glutaric acid, adipic acid, maleic



acid, fumaric acid, and phthalic acid, and illustrative of the hydroxycarboxylic acids are glycolic acid, lactic acid, hydroxyacrylic acid, oxybutyric acid, glyceric acid, malic acid, tartaric acid, and citric acid. Among these,

5  $\alpha$ -hydroxycarboxylic acids, especially lactic acid and malic acid are preferred.

Two or more of these organic acids can be used in combination. Further, the content of the organic acid can be preferably from 0.05 to 10 wt.%, more preferably from 0.1  
10 to 5 wt.%, even more preferably from 0.5 to 1 wt.% of the hair cosmetic composition according to the present invention.

In the hair cosmetic composition according to the present invention, an aromatic alcohol may be additionally incorporated to make improvements in touch feel and  
15 post-shampoo sleekness. Examples of the aromatic alcohol include benzyl alcohol, benzyloxyethanol and phenoxyethanol, with benzyl alcohol and benzyloxyethanol being preferred.

Two or more of these aromatic alcohols can be used in combination. Further, the content of the aromatic alcohol  
20 can be preferably from 0.01 to 20 wt.%, more preferably from 0.1 to 10 wt.%, even more preferably from 0.5 to 5 wt.% of the hair cosmetic composition according to the present invention.

The hair cosmetic composition having a pH of 1 to 5  
25 according to the present invention can be produced in a similar

manner as conventional hair cosmetic compositions except that its pH is controlled from 1 to 5.

### Examples

5            In the Examples, "%" means "wt.%", and "part" or "parts" means "part by weight" or "parts by weight".

#### Example A    Conditioning Shampoos

          An unfragranced conditioning shampoo (pH 3.7) of the formula shown in Table 1 was prepared. Aliquots of the  
10    unfragranced conditioning shampoo were fragranced with 0.5 wt.% of the fragrance compositions 1 to 12 shown in Table 2 and Table 3, respectively, to formulate conditioning shampoos. Samples of the conditioning shampoos were weighed as much as  
15    20 g each in standard 50-mL wide-mouth bottles "PS-06" (made of clear glass), and were placed in a storage cabinet controlled at 50°C. One month later, a scent given off from the surface of each shampoo was ranked by two expert panelists in accordance with the below-described ranking standard, and the average of their ranking scores was recorded. The ranking was an  
20    overall ranking on a masking effect for an acid smell, stability and the like while taking into consideration the spreading characteristics, the floating pattern and the like of the fragrance.

          Ranking standard:

25            5: Excellent

4: Good

3: Satisfactory as a commercial product

2: Slightly poor

1: Poor

5

Table 1

Conditioning shampoo composition (pH 3.7)

		(wt.%)
	Sodium POE(2) lauryl ether sulfate	11.0
10	Sodium lauryl sulfate	5.0
	Cationized guar gum	0.3
	Malic acid	0.75
	Lactic acid	0.1
	Sodium chloride	0.2
15	Benzyl alcohol	0.5
	Cocoyl monoethanolamide	1.0
	Dimethicone (viscosity: 100,000 cps)	0.5
	Amodimethicone	0.1
	Myristyl alcohol	1.0
20	Cetanol	0.5
	Ethylene glycol distearate	3.0
	Cationized hydroxyethylcellulose	0.3
	Glycerol	1.0
	Sodium hydroxide	q.s. to pH 3.7
25	Deionized water	Balance

Table 2

Types	Ingredient names	Fragrance compositions						
		1	2	3	4	5	6	7
A:MUSK	Musk ketone	0	3	3	3	3	3	3
A:MUSK	"GALAXOLIDE"	0	93	93	93	93	93	93
B-i:ESTER	Cis-3-hexenyl salicylate	0	0	15	0	0	15	15
B-i:ESTER	Ethyl 2-methylbutyrate (DPG 10%)	0	0	5	0	0	5	5
B-i:ESTER	"FRUITATE" (ethyl tricyclodecanylcarboxylate)	0	0	5	0	0	5	5
B-i:ESTER	Tricyclodecenyl propionate	0	0	20	0	0	20	20
B-i:ESTER	Methyl salicylate (DPG 10%)	0	0	5	0	0	5	5
B-ii:ESTER	o-t-Butyl cyclohexylacetate	0	0	15	0	0	15	15
B-iii:KETONE	"ADMASCENONE"	0	0	0	0.5	0	0	0.5
B-iii:KETONE	" $\alpha$ -DAMASCONE"	0	0	0	1.5	0	0	1.5
B-iii:KETONE	$\beta$ -Ionone	0	0	0	20	0	0	20
B-iii:KETONE	Methylionone-G	0	0	0	25	0	0	25
C:TERPENE	Limonene	0	0	0	0	25	25	25
SOLVENT	Dipropylene glycol	350	244	191	207	229	164	117
	FORMULA* <sup>note 1</sup>	650	650	650	650	650	650	650
	Total (parts by weight)	1000	1000	1000	1000	1000	1000	1000

FORMULA\*<sup>note 1</sup> Fragrance formula formed primarily of alcohols and containing aldehydes, dipropylene glycol, etc.

Table 3

Types	Ingredient names	Fragrance compositions						
		8	9	10	11	12		
-	Hexyl acetate	5	0	0	0	0		0
-	Iso-amyl acetate	2	0	0	0	0		0
-	Indole (DPG 10%)	5	0	0	0	0		0
A	Musk ketone	3	0	3	3	3		3
A	"GALAXOLIDE"	185	0	185	185	185		185
B-i	"FRUITATE"	0	0	0	5	5		5
B-i	Tricyclodecanyl propionate	0	0	0	20	20		20
B-i	Methyl salicylate (DPG 10%)	0	0	0	5	5		5
B-i	Cis-3-hexenyl salicylate	0	0	0	15	15		15
B-i	Ethyl 2-methylbutyrate (DPG 10%)	0	0	0	5	5		5
B-ii	o-t-Butyl cyclohexylacetate	0	0	0	15	15		15
B-iii	G-Decanolactone	0	20	0	20	20		20
B-iv	"DAMASCENONE"	0.5	0	0	0.5	0.5		0.5
B-iv	"d-DAMASCONE"	1.5	0	0	1.5	1.5		1.5
B-iv	$\beta$ -Ionon	20	0	0	20	20		20
B-iv	Methylionon-G	25	0	0	25	25		25
B-v	$\alpha$ -Methyl-1,3-benzodioxol-5-propanal	0	0	10	10	10		10
B-v	Decanal (DPG 10%)	0	0	2	2	2		2
B-v	Dodecanal (DPG 10%)	0	0	1	1	1		1
B-v	Hexylcinnamic aldehyde	0	0	90	90	90		90
B-v	$\alpha$ -Methyl-4-(1-methylethyl)-benzenepropanal	0	0	15	15	15		15
B-v	p-t-Butyl- $\alpha$ -methylhydrocinnamic aldehyde	0	0	140	140	140		140
C	Limonene	25	0	0	25	25		25
D	p-Menthane-8-thiol-3-one (1% DPG)	0	0	0	0	0		0
Ether	Dodecahydro-3a,6,6,9a-tetramethyl-naphtho[2.1-b]furan	0	0	0	0	0		0
	FORMULA <sup>*note 2</sup>	340	340	340	340	340		340
Solvent	Dipropylene glycol	388	640	402	57	55.7		55.7
	Total (parts by weight)	1000	1000	1000	1000	1000		1000

FORMULA<sup>\*note 2</sup> Fragrance formula formed primarily of alcohols and containing solvents such as dipropylene glycol, etc.

The results are shown in Table 4.

Table 4

### Results of Ranking in Stability and Masking Effect

	Comp. Exs.	Examples								Comp. Exs.		Examples		
		1	2	1	2	3	4	5	3	4	6	7	8	
Composition of Table 1	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	
Fragrance composition 1	0.50%													
Fragrance composition 2		0.50%												
Fragrance composition 3			0.50%											
Fragrance composition 4				0.50%										
Fragrance composition 5					0.50%									
Fragrance composition 6						0.50%								
Fragrance composition 7							0.50%							
Fragrance composition 8								0.50%						
Fragrance composition 9									0.50%					
Fragrance composition 10										0.50%				
Fragrance composition 11											0.50%			
Fragrance composition 12													0.50%	

changes with time	Room temp. 1 day	1	3	3.5	4	3.5	4	5	4	2	4	5
	50°C 1 month later	<1	2	3	4	3.5	3.5	4.5	1	2	3.5	4.5
Performance (masking performance)		1	3	3.5	4	3.5	4	5	4	2	4	5

As shown in FIG. 4, the conditioning shampoos formulated by fragrancng the aliquots of the unfragranced conditioning shampoo of Table 1 with the fragrance compositions of Examples 1 to 8 according to the present invention were acknowledged to have clear advantages in changes with time and performance (masking performance) over the conditioning shampoos formulated by fragrancng the aliquots of the unfragranced conditioning shampoo of Table 1 with the fragrance compositions of Comparative Examples 1 to 4 from a comparison therebetween.

In the case of Example 2, for example, the change with time upon elapsed time of 1 month at 50°C were ranked "4" (good) like the change with time one day after the formulation owing to the inclusion of the fragrance composition 4 according to the present invention, thereby demonstrating excellent stability at high temperatures. In the case of Example 5, the change with time upon elapsed time of 1 month at 50°C were ranked "4.5" as compared with "5" one day after the formulation owing to the inclusion of the fragrance composition 7 according to the present invention, thereby also demonstrating excellent stability at high temperatures.

#### Example B Clear Shampoo

	(wt.%)
Sodium POE(2) lauryl ether sulfat	10.0
Myristyl alcohol	0.5
Cationized hydroxyethylcellulose	0.2

	Laurylamidopropyl betaine	0.5
	Cocoyl monoethanolamide	0.3
	Malic acid	0.75
	Glycerol	1.0
5	Deionized water	Balance

A clear shampoo formulated by adding the fragrance composition 7 to the above-described composition (pH 3.7) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

10 Example C Anti-dandruff Shampoo

		(wt.%)
	Sodium POE(2) lauryl ether sulfate	10.0
	Sodium lauryl sulfate	5.5
	Myristyl alcohol	1.0
15	Cetanol	0.5
	Cationized hydroxyethylcellulose	0.3
	Cationized guar gum	0.3
	Cocoyl monoethanolamide	0.5
	Dimethicone (polymerization degree:2,000)	0.5
20	Dimethicone (polymerization degree:200)	0.5
	Malic acid	0.7
	Benzyloxyethanol	0.5
	Ethylene glycol distearate	3.0
	Cocoyl benzalconium chloride	0.5
25	Glycerol	1.0



Sodium chloride	0.2
Deionized water	Balance

A shampoo formulated by adding the fragrance composition 7 to the above-described composition (pH 3.7) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

#### Example D Conditioner

		(wt.%)
	Lactic acid	4
10	Polypropylene glycol (m.w. 400)	1
	Behenyltrimethylammonium chloride	1.7
	Stearyltrimethylammonium chloride	
	Behenyl alcohol	5.1
	Methylpolysiloxane ("SH500-5000CS")	3
15	Isopropyl palmitate	1
	Dipentaerythritol fatty acid ester	0.1
	Benzyloxyethanol	0.3
	Hydroxyethylcellulose	0.2
	Polyethylene glycol (m.w. 100,000)	
20	48% Sodium hydroxide	0.2
	Deionized water	Balance

A conditioner formulated by adding the fragrance composition 7 to the above-described composition (pH 3.3) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

## Example E

With respect to each fragrant material, ranking was conducted in accordance with the ranking methods and ranking standards to be described hereinafter.

## 5 &lt;Ranking methods &amp; ranking standards&gt;

## a. Scent from foam

## (1) Ranking method

1. Each fragrant material (0.5 g) was added to a shampoo base (99.5 g) to fragrance the shampoo base (0.5 wt.%).

10 2. On the following day, 0.5 g of the thus-fragranced shampoo base was weighed in a 100-cc container, and water was then added to produce a total weight of 10 g so that a 5% aqueous solution was obtained.

15 3. The aqueous solution was lathered for 1 minute with a commercial electric beater.

4. A scent given off from the foam was ranked in accordance with the following standard.

## (1) Ranking standard

20 5: A scent is given off very well so that the smell of the cosmetic base (acid smell) is completely masked.

4: A scent is given off well so that the smell of the cosmetic base (acid smell) is masked well.

25 3: A scent is given off well, but the masking of the smell of the cosmetic base (acid smell) is a little insufficient.

2: A scent is given off, but the smell of the cosmetic base (acid smell) is also recognized.

1: A scent is poorly given off, and the smell of the cosmetic base (acid smell) is recognized.

5     b. Scent from the bottle mouth

      (1) Ranking method

      1. Each fragrant material (0.5 g) was added to a shampoo base (99.5 g) to fragrance the shampoo base (0.5 wt.%).

      2. The thus-formulated shampoo was poured in 20 g  
10 aliquots into glass bottles of 50 g capacity (standardized wide-mouth bottles "PS-06", made of clear glass), followed by capping the glass bottles.

      3. On the following day, each bottle was uncapped to rank a scent from the bottle mouth.

15     (2) Ranking standard

      5: A scent is given off very well so that the smell of the cosmetic base (acid smell) is completely masked.

      4: A scent is given off well so that the smell of the cosmetic base (acid smell) is masked well.

20     3: A scent is given off well, but the masking of the smell of the cosmetic base (acid smell) is a little insufficient.

      2: A scent is given off, but the smell of the cosmetic base (acid smell) is also recognized.

25     1: A scent is poorly given off, and the smell of the

cosmetic base (acid smell) is recognized.

c. Persistence of scent

(1) Ranking method

1. Each fragrant material (0.5 g) was added to a shampoo  
5 base (99.5 g) to fragrance the shampoo base (0.5 wt.%).

2. On the following day, 2.5 g of the thus-formulated,  
fragranced sample were applied to a tress of false hair.

3. The tress of false hair was washed for 1 minute and  
rinsed (with running water) for 1 minute, and was then lightly  
10 dried with a towel.

4. The tress of false hair was allowed to dry naturally,  
and one day later, the scent was ranked.

(2) Ranking standard

5: A scent remains very well so that the smell of the  
15 cosmetic base is masked sufficiently.

4: A scent remains well so that the smell of the cosmetic  
base is masked sufficiently.

3: A scent remains, but the masking of the smell of the  
cosmetic base is a little insufficient.

20 2: A scent remains only faintly so that the masking of  
the smell of the cosmetic base is insufficient.

1: No scent remains at all.

d. Changes in odor with time (stability)

(1) Ranking method

25 Each fragrant material was added to an acidic shampoo

base. Samples were stored for 1 month in constant-temperature chambers controlled at 0°C and 50°C, respectively. After the temperatures of the respective samples were allowed to return to room temperature one month later, a scent from the sample stored at 50°C was ranked in comparison with a scent from the sample stored at 0°C in accordance with the below-described standard. The scent emitted from the sample stored at 0°C was taken as standard. The ranking was performed by a panel of 3 to 6 experts, and the average of their scores was indicated with 0.5 increments.

(2) Ranking standard

- 5: Substantially the same in both odor quality and intensity compared with the standard (the sample stored at 0°C).
- 4: Slightly changed in both odor quality and intensity compared with the standard, but still good as a scent of merchandise.
- 3: Changed in both odor quality and intensity compared with the standard, but still acceptable practically as a scent of merchandise.
- 2: Obviously changed in both odor quality and intensity compared with the standard.
- 1: Pronouncedly changed in both odor quality and intensity compared with the standard.

<Ranking results>

Tables 5 to 13 show fragrant materials which were found to have good stability and also to be good in any of the properties of scent from foam, scent from a bottle mouth and the persistence of a scent, based on the results of the  
5 above-described rankings.

Table 5

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
$\alpha$ -Amylcinnamic aldehyde	4.5	4.0	4.0	3.0	E
Acetophenone	4.5	5.0	4.0	4.0	E
Decanal	5.0	4.0	5.0	2.5	E
Undecanal	5.0	4.0	4.5	2.5	E
Undecenal	5.0	4.5	5.0	2.5	E
Dodecanal	5.0	4.0	5.0	2.5	E
2-Methylundecanal	4.5	4.0	4.5	2.5	E
Octanal	5.0	4.5	4.5	2.5	E
Nonanal	5.0	4.5	4.5	2.5	E
Allylcyclohexyl propionate	0.0	0.0	0.0	0.0	E
Allyl phenoxyacetate	0.0	0.0	0.0	0.0	E
Allylphenoxyacetic acid	3.5	4.5	4.0	4.0	E
Anisaldehyde	3.5	4.0	4.0	2.5	E
Anisyl acetate	3.5	3.5	3.5	3.5	E
Anisyl acetone	4.0	3.5	4.0	4.0	E
Borneol	4.0	4.5	4.5	2.0	E
3-(p-Tert-butylphenyl)-propanal ("BOURGENAL", trade name of Quest)	4.0	4.0	4.5	2.5	E
7-Methyl-3,5-dihydro-2H-benzodioxepin-3-one ("CALONE", trade name of Pfizer)	3.0	5.0	5.0	3.5	E
Cinnamyl acetate	3.5	4.0	4.0	4.0	E
Cis-4-decenal	4.5	5.0	5.0	2.5	E
Cis-jasmone	3.5	3.0	3.5	3.0	E

Table 6

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
Citronellyloxy acetaldehyde	4.0	4.0	4.5	2.5	E
Dodecanenitrile ("CLONAL", trade name of IFF)	4.0	4.5	4.5	3.5	E
2-Methyl-3-(isopropylphenyl)-propanal (cyclamen aldehyde)	3.5	3.5	4.0	2.0	E
Dihydrojasnone	3.5	4.0	4.5	3.0	E
Methyl dihydrojasmonate	4.5	3.5	3.5	2.0	E
Dihydromircenol	3.0	4.0	4.0	2.0	E
Tricyclodecylidene-4-butanal ("DUPICAL", trade name of Quest)	4.0	4.5	5.0	2.0	E
Ethyl 2-cyclohexylpropionate ("ETHYL POIRENATE", trade name of Kao)	4.0	4.5	4.0	4.0	E
Ethyl 2,6,6-trimethyl-1,3-cyclohexadiene-1-carboxylate ("ETHYL SUFRANATE", trade name of Quest)	4.0	4.5	4.5	4.0	E
Ethyl isovalerate	3.5	4.0	4.0	1.0	E
Ethyl linalol	3.0	2.5	3.0	2.0	E
Ethyl vanillin	3.5	4.5	5.0	2.0	E
Eugenol	4.5	4.0	4.0	3.5	E
6-Ethylidenoctahydro-5,8-methano-1H-1-benzopyran-2-one ("FLOREX", trade name of Firmenich)	4.0	4.0	4.5	2.5	E
Ethyl tricyclodecan-2-yl-carboxylate ("FRUITATE", trade name of Kao)	5.0	3.5	4.0	3.5	E
Franeol	4.0	5.0	5.0	1.5	E
Ethyl-3-(bicyclo[2.2.1]hepto-5-en-2-yl)-3-methyl glycidate ("GLYCOMEL", trade name of Firmenich)	3.0	3.5	4.0	4.0	
2-Methyl-3-(3,4-methylenedioxyphenyl)-propanol ("HELIONAL", trade name of IFF)	3.5	4.0	4.5	3.0	E
Cis-3-hexenyl methylcarbonate ("LIFFAROME", trade name of IFF)	2.0	3.0	4.0	2.5	E
2-Methyl-3-(4-tert-butylphenyl)-propanal ("LILIAL", Givaudan)	3.5	3.5	4.0	2.0	E
Linalol	3.5	4.0	4.0	3.5	
4(3)-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde ("LYRAL", trade name of IFF)	2.5	2.5	4.0	2.5	E
Methyl anthranilate	4.0	4.5	4.5	4.0	E
Methyl $\beta$ -naphthyl ketone	4.5	4.0	4.5	4.5	E
4(3)-(4-Methyl-3-pentenyl)-3-cyclohexene-1-carboxaldehyde ("MYRAC ALDEHYDE", trade name of IFF)	4.0	4.5	5.0	2.5	E



Table 7

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
2-(2-(4-Methyl-3-cyclohexen-1-yl)propyl)cyclopentanone ("NECTARYL", trade mark of Givaudan)	4.5	4.0	4.5	4.0	E
Nookkatone	3.5	3.5	3.5	3.0	E
Phenylacetaldehyde	1.0	4.5	5.0	2.5	E
2-Cyclohexylpropanal ("POLLENAL II", trade name of Kao)	4.5	4.0	4.0	2.0	E
8-Methoxytricyclodecane-4-carboxaldehyde ("SCENTENAL", trade name of Firmenich)	4.0	4.0	5.0	3.0	E
Thymol	4.5	4.5	4.5	2.0	E
Trans-2-decenal	4.5	5.0	5.0	2.5	E
Trans-2-hexanal	4.5	4.5	5.0	2.5	E
Tricyclodecanyl acetate	4.0	3.0	4.0	4.0	E
Tricyclodecanyl propionate	4.0	3.5	4.0	4.0	E
1-Acetyl-2,6,10-trimethylcyclododeca-2,5,9-triene ("TRIMOFIX", trade name of IIF)	4.0	2.5	3.0	3.0	E
Vanillin	3.5	4.5	4.5	2.5	E
1-Octen-3-yl acetate	3.5	4.0	3.0	2.0	F
2,5-Decadienal	3.0	4.5	4.5	2.5	F
2,4-Octadienal	3.0	5.0	4.0	2.5	F
2,6-Nonadienal	3.0	5.0	5.0	2.5	F
1,3-Oxathiane 2-methyl-4-propionate	3.0	4.0	2.5	2.0	F
2-Methylbutyl 2-methylbutyrate	3.0	4.0	1.0	2.0	F
2-Methylbutyl isovalerate	3.5	4.0	1.5	2.5	F
2-Methylbutyl valerate	3.0	3.5	1.5	2.0	F
Acetophenone	4.0	5.0	3.5	3.5	F
Acetylcedrene [ethanone, 1-(2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-1H-3a,7-methanoazulen-5-yl)- $\beta$ -methyl-naphthyl ketone]	4.0	3.5	3.0	4.5	F
$\alpha$ -Damascon	4.0	4.0	4.5	3.0	F
Hexanol	4.5	4.0	1.5	2.5	F
Hexanal	5.0	5.0	4.0	2.5	F

Table 8

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
Heptanal	5.0	4.5	4.0	2.5	F
Allylionone	3.5	4.5	3.5	3.0	F
Allyl heptanoate	3.0	3.5	3.0	1.5	F
Allyl hexanoate	3.0	4.5	1.5	1.5	F
$\alpha$ -Pinene	3.0	3.0	2.5	1.0	F
$\alpha$ -Terpinene	3.0	4.5	3.0	1.0	F
$\beta$ -Damascon	4.0	3.0	3.5	3.0	F
Benzaldehyde	4.5	4.5	2.0	2.0	F
Benzyl acetate	3.0	4.5	4.0	3.0	F
Benzyl propionate	3.0	4.0	3.5	3.0	F
Camphor	4.0	4.5	2.0	2.0	F
2-Methyl-3-(para-methoxyphenyl)-propylaldehyde ("CANTHOXAL", trade name of IFF)	3.0	3.5	2.5	2.0	F
Cedrene	4.0	4.5	2.0	4.0	F
3-Propylbicyclo(2.2.1)hept-5-ene-2-carbaldehyde ("CHRYSANTHAL", trade name of Quest)	4.0	5.0	4.5	3.5	F
Cinnamic alcohol	4.5	4.0	3.5	2.5	F
Cis-3-hexenol	4.5	4.5	4.5	3.0	F
Cis-3-hexenyl propionate	3.0	5.0	3.0	2.0	F
Cis-jasmone	3.5	3.5	3.5	3.0	F
Citral	4.5	4.5	4.0	2.5	F
Citronellal	4.0	4.5	3.0	2.5	F
Citronellol	3.0	3.5	3.5	2.5	F
Citronellyl nitrile	4.5	4.5	3.0	4.0	F
Thiol addition product of limonene (for example, "CORPS PAMPLEMOUSSE", trade name of Prodasynt)	4.0	4.0	2.5	2.0	F
Methyl cyclopentylidenacetate	3.5	4.5	1.0	2.0	F
Dimethylbenzylcarbonyl acetate	4.0	3.5	3.5	3.5	F

Table 9

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
1-(2,6,6-Trimethyl-1,3-cyclohexadien-1-yl)-2-buten-1-one ("DAMASCENONE", trade name of Firmenich)	4.0	4.5	4.0	3.0	F
1-(2,6,6-Trimethyl-3-cyclohexen-1-yl)-2-buten-1-one ("DELTA-DAMASCONE", trade name of IFF)	4.0	4.5	4.5	3.0	F
Dihydrojasnone	3.5	4.5	4.0	3.5	F
Ethyl maltol	4.0	5.0	4.5	1.5	F
Ethyl trimethylhexanoate	4.0	3.0	0.5	1.5	F
Ethyl 2-methylbutylate	3.0	4.0	1.0	1.0	F
Ethyl butyrate	3.0	4.5	3.5	1.0	F
Ethyl heptanoate	4.0	3.5	1.0	1.0	F
Ethyl hexanoate	4.0	4.5	1.5	1.0	F
Ethyl nonanoate	4.0	3.5	1.5	1.0	F
Ethyl octanoate	4.0	3.0	1.5	1.0	F
Ethyl propionate	2.5	5.0	2.0	1.0	F
Ethyl valerate	3.0	4.5	3.5	1.0	F
Fenchone	4.0	5.0	2.5	3.0	F
p-Ethyl-2,2-dimethylhydrocinnamaldehyde ("FLORALOZONE", trade name of IFF)	3.0	4.5	4.0	2.5	F
Ethyl 2-tert-butylcyclohexylcarbonate ("FLORAMAT", trade name of Kao)	4.0	4.0	2.5	3.5	F
2-sec-Butylcyclohexanone ("FRESCOMENTHE", trade name of Givaudan)	4.0	3.5	2.5	2.5	F
Ethyl-2-methyl-1,3-dioxolan-2-acetate	3.5	3.0	1.0	3.0	F
Geraniol	4.0	3.5	3.5	2.5	F
Geranyl nitrile	4.5	5.0	4.0	4.5	F
3-Methyl-5-prop-2-cyclohexen-1-one ("GRAVENONE", trade name of Dragoco)	3.5	4.0	2.5	2.0	F
Hexylcinnamic aldehyde	3.0	3.5	3.5	3.0	F
Heptyl cyclopentanone	4.0	4.0	4.5	4.0	F
Iron	4.5	4.5	3.0	2.0	F
Isobutyl salicylate	4.0	3.5	2.5	3.5	F

Table 10

Names of fragrant materials	stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
1-(2,4,4-Trimethyl-2-cyclohexen-1-yl)-2-buten-1-one ("ISO-DAMASCONE", trade name of Dragoco)	4.0	4.0	3.0	3.0	F
L-Carvone	4.0	5.0	4.5	2.0	F
3,7-Dimethyl-2(3),6-nonadienenitrile ("LEMONILE", tradename of Givaudan)	4.0	4.5	3.5	4.5	F
Limonene	4.5	3.5	2.0	1.0	F
L-Menthhol	4.0	3.0	2.5	2.0	F
Menthone	4.0	5.0	3.5	2.0	F
Maltol	4.0	4.5	4.0	1.0	F
3-Methyl-5-phenylpentanal ("MEFRANAL", trade name of Quest)	4.0	4.0	3.5	2.5	F
Methyl benzoate	3.5	4.5	2.0	3.0	F
Methyl butyrate	3.0	4.5	1.0	1.0	F
Methyl dihydrojasmonate	3.5	4.0	2.0	4.0	F
Methyl geranylolate	4.0	3.0	1.5	2.0	F
Methyl octanoate	4.0	4.0	1.5	2.0	F
Methyl salicylate	4.0	4.5	3.5	2.0	F
Methyl valerate	4.0	5.0	3.0	1.0	F
Butyl butyrate	4.0	3.5	1.0	1.0	F
Hexyl acetate	3.5	4.0	1.5	1.0	F
Hexylcyclopentanone	4.0	3.5	3.5	3.0	F
Amyl valerate	4.0	3.5	1.5	1.5	F
Amyl butyrate	3.5	4.0	1.0	1.0	F
Amyl propionate	3.0	4.5	2.0	1.0	F
Orthomethoxycinnamic aldehyde	2.5	4.0	4.0	2.0	F
o-Tert-butylcyclohexyl acetate	4.0	3.5	2.0	3.0	F
Para-Amylcyclohexanone	4.0	3.5	2.5	3.0	F
Paracymene	4.0	4.5	1.5	1.0	F

Table 11

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
Phenylethyl alcohol	4.0	3.5	3.0	2.5	F
Phenylethyl propionate	3.0	4.0	3.5	2.5	F
Phenylhexanol	4.5	2.5	2.0	2.5	F
Phenylpropyl acetate	3.0	3.5	3.0	3.0	F
4-Methyltricyclo[6.2.1.02.7]undecan-5-one ("PLICATONE", trade name of Firmenich)	3.0	3.0	2.5	2.5	F
p-Menthane-8-thiol-3-one	4.0	5.0	4.5	2.5	F
p-Tert-butylcyclohexyl acetate	4.0	3.5	2.0	3.5	F
Styrallyl acetate	3.5	5.0	3.0	3.0	F
Terpineol	4.0	3.5	2.0	2.0	F
Terpinolene	3.0	3.5	1.5	1.5	F
Terpinyl propionate	3.0	3.5	2.0	2.5	F
Trans-2-hexanal	3.0	4.5	3.0	2.5	F
Trans-2-hexenyl acetate	3.5	3.5	1.5	1.5	F
Trimethylhexanal	4.5	4.5	3.5	2.5	F
2,4-Dimethyl-3-cyclohexenylcarboxaldehyde ("TRIPLAL", trade name of IFF)	4.5	5.0	4.5	2.5	F
2,2,5-Trimethyl-5-pentylcyclopentanone ("VELOUTONE", trade name of Firmenich)	4.0	3.5	2.0	2.5	F
4-Cyclohexyl-4-methyl-2-pentanone ("VETIVERTONE", trade name of Quest)	3.5	4.0	2.5	3.0	F
Vetiveryl acetate	3.5	4.0	3.5	3.5	F
Amylcyclopentane	4.0	4.5	4.0	3.0	F
Allyl anthranillate,	3.5	2.5	2.5	4.0	G
1-(2-Tert-butylcyclohexyloxy)-2-butanol ("AMBER CORE", trade name of Kao)	4.0	3.5	3.0	4.0	G
7-cyclohexadecenolide (ambrettolide)	2.5	2.5	3.5	4.0	G
(3 $\alpha$ , 6, 6, 9 $\alpha$ -tetramethyldodecahydronaphtho[2.1-b]furan ("AMBROXANE", trade name of Kao)	4.5	3.5	3.5	4.0	G

Table 12

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
2-Ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol ("BACDANOL", trade name of IFF; "BANGALOL", trade name of Givaudan)	4.0	2.5	3.5	4.5	G
Benzophenone	5.0	3.0	3.5	4.0	G
Benzyl alcohol	4.5	4.0	3.5	4.0	G
Caryophyllene	4.0	1.5	1.0	3.5	G
6,7-Dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone ("CASHMERAN", trade name of IFF)	5.0	4.5	4.5	4.0	G
4-acetyl-6-tert-butyl-1,2-dimethylindan ("CELESTOLIDE", trade name of International Flavors & Fragrances Inc.)	5.0	2.0	2.5	3.5	G
Cis-3-hexenyl anthranilate	3.0	2.0	2.0	4.0	G
4-Hexenyl salicylate	3.0	3.0	2.5	3.5	G
Coumarin	4.0	3.5	4.0	4.0	G
Cyclopentadecanone	5.0	2.5	2.5	4.0	G
Dynascone	4.0	4.5	5.0	3.5	G
3-Methyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-4-penten-2-one 1 ("EVANOL", trade name of Givaudan)	4.0	4.0	4.0	4.0	G
Ethyl salicylate	3.5	3.5	1.5	4.0	G
Eugenol acetate	3.0	3.0	3.0	3.5	G
Geranyl cyclopentanone	5.0	3.5	3.5	4.0	G
Oxacyclohexadecen-2-one ("HABANOLIDE", trade name of Firmenich)	2.5	2.0	2.5	4.0	G
Heliotropine	4.5	4.0	4.0	4.0	G
Heliotropyl acetone	4.0	2.5	2.0	4.0	G
Hexadecanolide	2.5	2.0	2.5	4.0	G
$\alpha$ -Ionone	4.5	4.0	4.0	4.0	G
$\beta$ -Ionone	4.5	3.0	2.5	4.5	G
7-Acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-tetramethylnaphthalene ("ISO E SUPER", trade name of IFF)	4.5	3.0	3.5	5.0	G

Table 13

Names of fragrant materials	Stability	Scent from bottle mouth	Scent from foam	Persistence of scent	Ingredient
Isobutyl anthranilate	3.0	2.0	2.5	4.0	G
Isoeugenol acetate	3.0	2.5	2.0	3.5	G
$\delta$ -Decalactone	4.0	3.5	3.5	4.5	G
$\alpha$ -Methylionone	4.5	3.0	3.0	4.0	G
$\gamma$ -Methylionone	4.5	3.5	3.5	4.5	G
3-Methylcyclopentadecanone ("MUSCENONE DELTA", trade name of Firmenich)	5.0	3.5	4.0	4.5	G
3-Methylcyclopentadecanone (muscone)	4.0	2.5	3.0	4.0	G
Ethylene dodecanedioate ("MUSK C-14", trade name of Takasago)	2.5	2.0	2.0	4.0	G
Musk ketone	5.0	4.5	4.5	5.0	G
11-Oxa-16-hexadecanolide ("MUSK R-1", trade name of Quest)	2.5	3.0	3.5	4.0	G
5-Cyclohexadecen-1-one ("MUSK TM-II", trade name of Soda)	4.0	2.5	2.5	3.5	G
Butyl anthranilate	3.0	2.0	2.5	4.0	G
Hexyl salicylate	3.0	2.0	2.5	4.0	G
Amyl salicylate	3.5	2.5	2.0	4.0	G
10-Oxa-16-hexadecanolide ("OXALIDE", trade name of Takasago)	2.5	2.0	2.0	3.5	G
4,6,6,7,8,8-Hexamethyl-1,3,4,6,7,8-hexahydrocyclopentabenzopyran ("PEARLIDE PURE", trade name of Kao)	4.0	3.0	3.0	5.0	G
Cyclopentadecanolide ("PENTALIDE", trade name of Soda)	2.5	2.0	2.0	4.0	G
2-Cyclohexylidene-2-phenyl acetoneitrile ("PEONILE", trade name of Givaudan)	4.5	3.5	3.5	4.5	G
3,3-Dimethyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-4-penten-2-ol ("POLYSANTOL", trade name of Firmenich)	4.0	3.0	3.5	4.0	G
4-(Parahydroxyphenyl)-2-butanone ("RASPBERRY KETONE", trade name of Takasago)	4.5	4.5	4.5	4.5	G
2-Methyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol ("SANDALMYSORE CORE", trade name of Kao)	4.5	3.5	4.0	4.0	G
3-Methyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-pentan-2-ol ("SANDALORE", trade name of Givaudan)	4.0	2.5	3.0	4.0	G
Cis-8-cyclohexadecanolide ("SCENTOLIDE", trade name of Synarom)	4.0	2.0	2.0	4.0	G
6-Acetyl-1,1,2,4,4,7-hexatetralin ("TONALIDE", trade name of PFW)	5.0	2.5	3.5	5.0	G

Example F

The formula of a fragrance composition for an acidic shampoo will be shown.



Table 14

## Fragrance Composition for Acidic Shampoo

	Ingredient names	Fragrance compositions									
		13	14	15	16	17	18	19			
Ingredient F	Decanal	E	0.2	0.2	0.2	-	-	-	-	-	-
	Dihydromircenol	E	20.0	20.0	20.0	-	-	-	-	-	-
	"CALONE"	E	0.3	0.3	0.3	-	-	-	-	-	-
	"HELIONAL"	E	10.0	10.0	10.0	-	-	-	-	-	-
	"FRUITATE"	E	5.0	5.0	5.0	-	-	-	-	-	-
	Tricyclodecanyl propionate	E	20.0	20.0	20.0	-	-	-	-	-	-
	Eugenol	E	20.0	20.0	20.0	-	-	-	-	-	-
	Methyl anthranilate	E	0.1	0.1	0.1	-	-	-	-	-	-
	Cyclamen aldehyde	E	15.0	15.0	15.0	-	-	-	-	-	-
	"LILIAL"	E	140.0	140.0	140.0	-	-	-	-	-	-
	Anisyl acetone	E	20.0	20.0	20.0	-	-	-	-	-	-
	Vanillin	E	2.0	2.0	2.0	-	-	-	-	-	-
Ingredient F	Total of ingredient E		252.6	252.6	252.6	0.0	252.6	0.0	252.6	0.0	0.0
	"TRIPLAL"	F	1.5	1.5	-	1.5	-	1.5	-	1.5	-
	Methyl salicylate	F	0.5	0.5	-	0.5	-	0.5	-	0.5	-
	Citronellole	F	25.0	25.0	-	25.0	-	25.0	-	25.0	-
	"δ-DAMASCONE"	F	1.5	1.5	-	1.5	-	1.5	-	1.5	-
	"DAMASCENONE"	F	0.5	0.5	-	0.5	-	0.5	-	0.5	-
	Phenylethyl alcohol	F	60.0	60.0	-	60.0	-	60.0	-	60.0	-
	Hexylcinnamic aldehyde	F	90.0	90.0	-	90.0	-	90.0	-	90.0	-
	Acetylcedrene	F	25.0	25.0	-	25.0	-	25.0	-	25.0	-
	"CORPS PAMPLEMOUSSE 10%LIM"	F	0.2	0.2	-	0.2	-	0.2	-	0.2	-
	Styrallyl acetate	F	0.0	0.0	-	0.0	-	0.0	-	0.0	-
	Ethyl 2-methylbutyrate	F	0.5	0.5	-	0.5	-	0.5	-	0.5	-
	o-Tert-butylcyclohexyl acetate	F	15.0	15.0	-	15.0	-	15.0	-	15.0	-
	Terpineol	F	15.0	15.0	-	15.0	-	15.0	-	15.0	-
	Total of ingredient F		234.7	234.7	0.0	234.7	0.0	234.7	0.0	234.7	0.0

Table 14 (Cont'd)

Fragrance Composition for Acidic Shampoo

	Ingredient names	Fragrance compositions							
		13	14	15	16	17	18	19	
Ingredient G	8-Decalactone	G	-	20.0	20.0	-	-	20.0	
	Ionon	G	-	20.0	20.0	-	-	20.0	
	γ-Methylionone	G	-	25.0	25.0	-	-	25.0	
	"SANDALMYSORE CORE"	G	-	18.0	18.0	-	-	18.0	
	"AMBROXANE 10%"	G	-	0.3	0.3	-	-	0.3	
	Heliotropine	G	-	35.0	35.0	-	-	35.0	
	Musk ketone	G	-	3.0	3.0	-	-	3.0	
	"PEARLIDE PURE"	G	-	185.0	185.0	-	-	185.0	
	Total of ingredient G		0.0	306.3	306.3	0.0	0.0	306.3	
	Other ingredients		512.7	441.1	459.0	747.4	765.3	693.7	
	TOTAL		1000.0	1000.0	1000.0	1000.0	1000.0	1000.0	

The fragrance compositions 13 to 19 shown in Table 14 were added at 0.5% to aliquots of the acidic shampoo base of Table 1 to fragrance the same. The thus-formulated shampoos were then ranked. The ranking results are shown in Table 15.

Table 15

## Acidic Shampoo

	Examples					Comparative Examples				
	9	10	11	12		3	4	5		
Composition of Table 1	99.50%	99.50%	99.50%	99.50%		99.50%	99.50%	99.50%		
Fragrance composition 13	0.50%									
Fragrance composition 14		0.50%								
Fragrance composition 15			0.50%							
Fragrance composition 16				0.50%						
Fragrance composition 17						0.50%				
Fragrance composition 18							0.50%			
Fragrance composition 19								0.50%		
TOTAL	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%		
Ranking of scent										
- Scent from foam	5.0	4.0	4.0	3.0		3.5	2.5	2.0		
- Scent from bottle mouth	5.0	4.0	3.5	4.0		2.0	3.0	3.0		
- Persistence of scent	5.0	3.0	4.5	4.0		2.0	2.5	3.0		
Overall ranking of scent	5.0	4.0	4.0	3.5		2.0	2.0	2.5		
Changes in scent with time (50°C/1 month)	5.0	4.0	5.0	4.0		4.0	4.0	4.0		

### <Results>

Example 9 making the combined use of all three types of ingredients was found to give off a good scent in all stages, to keep the acid smell of the cosmetic base masked, and to have an excellent fragrance as a final product. Examples 10 to 12 each making the combined use of two types of ingredients from the ingredients (E), (F) and (G) were each found in masking and balance to give off a good scent in all the stages, to keep the acid smell of the cosmetic base masked, and to have an excellent fragrance as a final product. In contrast, each of Comparative Examples 3 to 5 which made the use of only one type of ingredient (E), (F) or (G) was not balanced well in scent in each of the stages, and even by an overall judgement, was found to have an insufficient fragrance as a fragrance of a final product.

### <Overall Ranking>

A standard for the ranking item "overall ranking of fragrance" in Examples F and G will now be shown.

The "overall ranking of fragrance" is a ranking determined by taking into comprehensive consideration the three ranking items of a scent from foam, a scent from a bottle mouth and the persistence of a scent, and the following ranking standard is relied upon.

5: A well-balanced scent is given off very well in all the stages, and the smell of a cosmetic base is

completely masked.

4: A well-balanced scent is given off very well in all the stages, and the smell of a cosmetic base is masked well.

5 3: A well-balanced scent is given off very well in all the stages, and the smell of a cosmetic base is substantially masked.

2: A scent is poorly given off in at least one of the stages, and the masking of the smell of a cosmetic base is insufficient.

10 1: A scent is poorly given off in all the stages, and the masking of the smell of a cosmetic base is insufficient.

#### Example G

15 The formula of a fragrance composition for an acidic shampoo will be shown.

Table 16  
Fragrance Composition for Acidic Shampoo

	Ingredient names		Fragrance compositions									
			20	21	22	23	24	25	26			
Ingredient F	"LILIAL"	E	70	70	70	-	70	-	-			
	Ethyl linalol	E	40	40	40	-	40	-	-			
	"CALONE" 10%	E	5	5	5	-	5	-	-			
	Total of ingredient E		115	115	115	0	115	0	0			
Ingredient F	"DAMASCENONE" 50%	F	2	2	-	2	-	2	-			
	"TRIPLAL"	F	2	2	-	2	-	2	-			
	Citronellole	F	100	100	-	100	-	100	-			
	Hexylcinnamic aldehyde	F	50	50	-	50	-	50	-			
	Methyl hydrojasmonate	F	200	200	-	200	-	200	-			
	Limonene	F	30	30	-	30	-	30	-			
	o-Tert-butylcyclohexyl acetate	F	60	60	-	60	-	60	-			
	Total of ingredient F		444	444	0	444	0	444	0			
Ingredient F	"SANDALMYSORE CORE"	G	60	-	60	60	-	-	60			
	"ISO E SUPER"	G	100	-	100	100	-	-	100			
	"HABANOLIDE"	G	100	-	100	100	-	-	100			
	"PEARLIDE PURE"	G	150	-	150	150	-	-	150			
	Total of ingredient G		410	0	410	410	0	0	410			
	Other ingredients		31	441	475	146	885	556	590			
	TOTAL		1000	1000	1000	1000	1000	1000	1000			

The fragrance compositions 20 to 26 shown in Table 16 were added at 0.5% to aliquots of the acidic shampoo base of Table 1 to fragrance the same. The thus-formulated shampoos were then ranked. The ranking results are shown in Table 17.



Table 17

## Acidic Shampoo

	Examples					Comparative Examples		
	13	14	15	16		6	7	8
Composition of Table 1	99.50%	99.50%	99.50%	99.50%		99.50%	99.50%	99.50%
Fragrance composition 20	0.50%							
Fragrance composition 21		0.50%						
Fragrance composition 22			0.50%					
Fragrance composition 23				0.50%				
Fragrance composition 24						0.50%		
Fragrance composition 25							0.50%	
Fragrance composition 26								0.50%
TOTAL	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%
Ranking of scent								
- Scent from foam	5.0	4.0	4.0	3.0		3.0	2.5	2.0
- Scent from bottle mouth	5.0	4.0	3.5	4.0		3.0	3.0	2.0
- Persistence of scent	5.0	3.0	4.5	4.0		2.0	2.0	3.0
Overall ranking of scent	5.0	4.0	4.0	3.5		2.0	2.5	2.5
Changes in scent with time (50°C/1 month)	5.0	4.0	5.0	5.0		4.0	4.0	4.0

### <Results>

Example 13 making the combined use of all the three types of ingredients was found to give off a good scent in all the stages, to keep the acid smell of the cosmetic base masked, and to have an excellent fragrance as a final product. Examples 14 to 16 each making the combined use of two types of ingredients from the ingredients (E), (F) and (G) were each found in masking and balance to give off a good scent in all the stages, to keep the acid smell of the cosmetic base masked, and to have an excellent fragrance as a final product. In contrast, each of Comparative Examples 6 to 8 which made the use of only one type of ingredient (E), (F) or (G) was not balanced well in scent in each of the stages, and even by an overall judgement, was found to have an insufficient fragrance as a fragrance of a final product.

### Industrial Applicability

The fragrance compositions according to the present invention are excellent in masking effects for a smell peculiar to hair cosmetic compositions having a pH of 1 to 5, and are also superb in long-term stability under high-temperature conditions. Acidic hair cosmetic compositions with the fragrance compositions added therein can each retain a good scent over a long period.

A well-balanced addition of the ingredients (E) to (G)

to a fragrance composition makes it possible to obtain a fragrance composition for a hair cosmetic composition having a pH of 1 to 5, which can stably retain a good scent in the hair cosmetic composition having a pH of 1 to 5, gives off  
5 a good scent upon application of the hair cosmetic composition, is excellent in the persistence of scent after the application, and moreover, gives off a good scent in a bottled state (from a bottle mouth).